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Earnings sustainability, economic conditions and the value relevance of accounting information

Leif Atle Beisland [a,*], Mattias Hamberg [b]

[a] University of Agder, 4604 Kristiansand, Norway
[b] The Norwegian School of Economics, Norway

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Summary This study demonstrates that the value relevance of accounting information is influenced by the ability to capitalize investments in valuable resources. We use data from Sweden to show that firms that operate in industries in which accounting conservatism limits this capitalization display lower value relevance as a result of more unsustainable earnings components. However, when controlling for the different properties of sustainable and unsustainable earnings components, the difference vanishes. Moreover, we show that firms operating in industries in which more investments are immediately expensed display systematic temporal variations in the level of value relevance. We contend that economic conditions in the form of investment levels and growth expectations explain this variation. Thus, value relevance can be substantially affected by the prevailing economic context.

Introduction

Accounting information plays an important role when shareholders evaluate a firm's prospects in forming their investment decisions. In accounting research, statistical associations between accounting information and share prices are used to assess the degree of value relevance of accounting information for shareholders (Collins, Maydew, & Weiss, 1997; Gjerde, Knivsflå, & Sættem, 2011; Thinggaard & Damkier, 2008). Although a few studies report that the level of value relevance changes in the long term (Collins et al., 1997; Francis & Schipper, 1999), there is little documentation of short-term variations in measures of value relevance. Temporal variations in value relevance are a matter of research interest because value relevance measures are often used to compare time periods and accounting regimes. Such comparisons rely on the assumption that measures of value relevance are solely determined by the accounting system. We use a sample of Swedish firms to challenge this important assumption and investigate how value relevance is associated with earnings sustainability and general economic conditions.

The analysis departs from two realities: (i) an immediately expensed investment decreases current earnings but increases future earnings, and (ii) the unconditional form of accounting conservatism inhibits firms from capitalizing their investments in many valuable resources (e.g., research and human capital). We argue that because the level of investment varies over time, firms that invest heavily in resources that cannot be capitalized as assets display larger temporal variations in their reported earnings. The consequence is that the unconditional form of accounting conservatism has more severe effects on value relevance measures

* Corresponding author. Tel.: +47 97 53 62 63.
E-mail address: leif.a.beisland@uia.no (L.A. Beisland).

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when a firm expenses more of its investments. The variation in the effect of a conservative accounting system over time is not an unknown feature (Givoly & Hayn, 2000), but its effects on measures of value relevance have attracted little attention in prior research.

In the empirical analysis, we follow the procedures of researchers such as Francis and Schipper (1999) and partition the sample to study differences in value relevance between firms that are likely to capitalize a large portion of their investments in valuable resources (referred to as *traditional industries*) and firms that must expense most of their investments in valuable resources (referred to as *non-traditional industries*). The initial empirical tests suggest that firms operating in traditional industries, such as manufacturing firms, report more value-relevant information than firms in non-traditional industries, such as consulting and biotechnology firms.

To better understand these differences in value relevance, we begin by analyzing reported earnings and their components. To be value-relevant, reported earnings must represent a level of earnings that can be sustained in the future (Beaver, Lambert, & Morse, 1980). We develop three models that separate sustainable from unsustainable earnings components. Throughout the study, we regard sustainable earnings as earnings components that are expected to prevail over a multi-period future, and we consider unsustainable earnings to be transitory, single-period earnings components. The empirical tests show that the separation of sustainable and unsustainable earnings components increases the measure of value relevance. However, value relevance increases considerably more for firms in non-traditional industries. Indeed, the difference in value relevance between the two groups disappears completely when sustainable and unsustainable earnings components are separated.

Our results suggest that firms operating in non-traditional industries have more unsustainable earnings components in their reported earnings. Although the separation of sustainable and unsustainable earnings components is based on mechanical techniques rather than, for example, a firm's own disclosure of unsustainable earnings components, we believe that the larger unsustainable earnings components in non-traditional industries can be attributed to their many investments in valuable resources that cannot be capitalized. We contend that a comparison of the value relevance between two samples is complicated if the ability of reported earnings to capture sustainable earnings differs between the two samples.

Next, we analyze whether economic conditions affect measures of value relevance. We suggest that the growth in GDP per capita proxies for the firm's level of investment, and that the stock market's average book-to-market ratio proxies for the market's growth expectations. We document the systematic temporal variations in value relevance for non-traditional industries and find that these variations are significantly associated with the level of investment and growth expectations. However, firms operating in traditional industries do not experience these variations. We suggest two explanations. First, an immediate expensing of valuable investments renders accounting earnings similar to cash flows, and when the level of investment is high, current earnings are particularly unrepresentative of future earnings. Thus, high investment levels reduce the value relevance of accounting information for firms with non-recognizable resources. When the level of investment is low, the reported earnings contain fewer unsustainable elements; thus, the value relevance increases. Second, firms that rely on unrecognized resources are more difficult to understand, and this difficulty reduces an investor's ability to determine their future cash flows and value. We suggest that the difficulty of understanding a firm's resource base plays a greater role when the expected growth rate is high than when it is low.

Although the two proxies we use are somewhat crude measures of the investment level and growth expectations, the analysis clearly shows that exogenous factors influence the relationship between accounting information and value when investments are immediately expensed. Our results suggest that researchers must be cautious to avoid mistakenly attributing differences in value relevance to differences in accounting because the real cause can be the research design. We suggest two areas in which caution is required. First, biases are more likely to occur in comparisons between samples in which the proportion of unsustainable earnings elements differ. In these situations, simple adjustments for unsustainable earnings will provide a more reliable testing environment. Second, biases are more likely to occur in comparisons between samples containing differences in the level of investment and growth expectation. In particular, these biases can occur when the analyzed time periods are short. These analyses may include comparisons of the value relevance before and after the adoption of a new accounting standard. Indeed, when the firms in these samples have a greater reliance on resources that must be immediately expensed, more biases may be present in the analysis.

The remainder of the paper is organized as follows. "Research hypotheses" discusses prior research and develops the hypotheses to be tested. "Measuring value relevance" outlines our research methodology and data sample. "Test results and analysis" presents the results of the empirical analysis, and "Conclusions" concludes the analysis.

Research hypotheses

The longitudinal development of value relevance has been subject to extensive research. Several studies based on US data suggest that accounting earnings have become less relevant over time (Francis & Schipper, 1999; Lev & Zarowin, 1999). These findings are not confirmed in the Scandinavian setting. Thinggaard and Damkier (2008) do not find that the level of value relevance decreased in Denmark during the time period from 1983 to 2002, whereas Gjerde et al. (2011) actually find that the value relevance in Norway *increased* from 1965 to 2004. To the best of our knowledge, there is no similar longitudinal study that uses Swedish data.

A large number of studies have demonstrated the important role of accounting information in capital markets (Kothari, 2001). Longitudinal studies of value relevance illustrate that this role is dependent on developments that are exogenous to accounting regulations, such as changes in company size and industry composition (Collins et al., 1997). Nonetheless, the main focus of most longitudinal studies is on accounting systems and regulations (e.g., Barth, Landsman, & Lang, 2008). One of the most basic features of an accounting system is that investments are capitalized as assets when certain recognition criteria are fulfilled. However, although the criteria have remained similar for