



Discussion of: “Contextual Fundamental Analysis Through the Prediction of Extreme Returns”

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Abstract. Beneish, Lee and Tarpley (2000) represents one of a small, but growing number of studies that develop and test contextual fundamental analysis techniques. Such studies offer great promise for increasing our understanding of the role of accounting information in evaluating firm performance. However, these studies also introduce their own unique research design issues. In this paper, I discuss the opportunities and research design issues facing this new line of research, using Beneish, Lee and Tarpley to illustrate my points.

Research on fundamental analysis has seen a resurgence in the last decade. Following the lead of Ou and Penman (1989), a large number of papers have demonstrated the usefulness of financial ratios based on accounting statement data to predict future performance. However, with just a few exceptions, most of this work has been conducted at a very general level and empirical results have been documented using broad cross-sections of firms. Such broad sample research is useful for demonstrating the promise of fundamental research and for providing some very general guidelines. However, it seems clear that most practical applications of fundamental analysis should be carefully tailored to the characteristics of the firms being analyzed. For example, a cursory analysis of sell-side research reports reveals that analysis techniques vary systematically as a function of characteristics such as industry membership and growth opportunities. Despite the widespread practical use of contextual fundamental analysis, relatively little academic research has attempted to develop and test techniques of fundamental analysis that are tailored to specific contexts. Thus, there are great potential opportunities for research on contextual fundamental analysis.

Beneish, Lee and Tarpley (2000) is one of the few studies investigating contextual fundamental analysis. Beneish, Lee and Tarpley (BLT hereafter) is also noteworthy in that it provides the beginnings of a guiding framework for conducting contextual fundamental analysis. In this discussion, I seek to further define this framework and to highlight some of the research design issues confronted in applying this framework. I use the BLT study to illustrate several of my points. My discussion is divided into three sections, which correspond to the three major steps in the BLT framework for conducting contextual fundamental analysis. I begin by discussing how one goes about selecting a fruitful context in which to conduct research. Next, I discuss how one goes about building a fundamental analysis model that is tailored to the selected context. Finally, I discuss issues arising in evaluating the usefulness of the contextual fundamental analysis model.

1. Selecting the Context

The potential gains to research on contextual fundamental analysis hinge critically on the selection of a fruitful context in which to conduct the research. Other things equal, a larger sample size will lead to more powerful empirical tests. Since contextual fundamental analysis focuses on sub-samples of the larger sample population, its success depends critically on identifying a context exhibiting strong and unique empirical characteristics that are not shared by the broader population. I can think of two obvious bases for selecting contexts in which firms are likely to share unique characteristics: (1) industry membership; and (2) style characteristics. I discuss each in more detail below:

1.1. Industry Membership

The most obvious basis for conducting contextual fundamental analysis is industry membership. Indeed, this is the basis that most practitioners use for conducting contextual fundamental analysis. Financial analysts, particularly on the sell-side, tend to specialize in analyzing stocks belonging to similar industries. Moreover, the financial and non-financial metrics tracked by analysts tend to differ widely as a function of industry membership. Despite the practical importance of industry-level financial analysis, there is relatively little research in this area. Significant exceptions include studies of the oil and gas drilling industry (e.g., Magliolo, 1986) and Amir and Lev's (1996) study of the wireless telecommunications industry. However, great opportunities remain in this area.

1.2. Common Style Characteristics

A second natural basis for conducting contextual analysis is to analyze firms with common style characteristics. In particular, analysts frequently divide firms into 'value' and 'growth' categories for the purpose of conducting fundamental analysis. Value firms tend to have low valuations relative to fundamentals such as earnings and book value. Hence, traditional fundamental valuation techniques are well suited to value firms. In contrast, growth firms tend to have high valuations relative to fundamentals. Techniques for valuing growth options are required for growth firms. Common style characteristics are not restricted to 'value' and 'growth.' BARRA, the commercial risk-modeling service, has identified 12 important style characteristics in U.S. stocks including earnings variability, leverage and size. Existing research in this area is also scarce. Piotroski (2001) conducts a contextual analysis of value firms. He uses fundamental analysis to identify financially 'healthy' value firms, and show that these firms have even larger positive abnormal stock returns than does the average value firm. The BLT study also falls into this category. However, BLT's motivation for choosing 'extreme performers' as a common contextual characteristic is less clear. At times, the authors motivate the selection of extreme performers as an attempt to isolate growth stocks, but there are clearly more direct ways to identify growth stocks. It seems that the authors' initial grounds for the selection of extreme performers was that since these stocks have volatile stock prices, it may be possible to construct a lucrative trading

strategy by predicting the direction of the stock price movements. But this alone does not seem to provide a clear motivation for selecting a context, because it is not clear why the fundamental analysis model should differ for extreme performers. We turn to the issue of model design next.

2. Designing the Contextual Analysis Model

The ultimate goal of contextual fundamental analysis is to facilitate the construction of more powerful models for explaining and forecasting firm performance. The increase in power can come from either the introduction of new explanatory variables that are tailored to the particular context, or from structural differences in the parameters on explanatory variables that have been used in general studies of fundamental analysis. In either case, the appeal and robustness of these models will be enhanced if sound economic intuition is used to motivate the construction of the models. Amir and Lev's (1996) careful selection of leading non-financial performance measures in the wireless telecommunications industry represents a good example of contextual model building.

In this respect, the BLT paper is somewhat disappointing. The variables used in their contextual forecasting model are mechanically selected from the past literature, and little attempt is made to motivate any structural differences in the model parameters for their extreme performer context. At best, this leaves us with little understanding of why the BLT contextual model should provide improved explanatory power, and at worst, it leads us to question whether the apparent improvements have resulted from mining the data.

In short, the selection of a fruitful context and the construction of a powerful contextual forecasting model are inexorably linked. A fruitful context is one in which the researcher has strong economic intuition about how and why the contextual fundamental analysis model should differ from more general models.

3. Evaluating the Contextual Analysis Model

The ultimate goal of contextual fundamental analysis is to provide a more useful model. Usefulness is typically defined in terms of the ability of the model to explain and predict some key attribute of firm performance, such as stock price, earnings or financial distress. However, in evaluating a model of contextual fundamental analysis, it is important that the superiority of the model be demonstrated over competing non-contextual models. One must go beyond simply demonstrating that the explanatory variables achieve economic and statistical significance.

While this task may sound straightforward, there are some simple pitfalls to be avoided. One obvious pitfall is not controlling for the degree of cross-sectional variation in the explanatory variables. For example, consider the task of predicting future stock returns using book-to-market ratios. One may find that the ability of the book-to-market ratio to predict future stock returns is greater in a sample of Internet firms than in a more general cross-section of firms. However, if this result derives solely from the fact that Internet firms have much more cross-sectional variation in book-to-market ratios, then contextual

fundamental analysis has not enhanced the usefulness of the model. To make the case for contextual fundamental analysis, we must show that conditional on a given amount of variation in book-to-market, the predictable variation in future stock returns is greater for Internet firms. In other words, we must show that there is a structural shift in the model when applied in the specific context.

Table 3 of BLT provides an excellent framework for evaluating the usefulness of a model of contextual fundamental analysis. The model is estimated on a general sample of firms, with each explanatory variable interacted with an indicator variable that takes the value of one if the firm belongs to the contextual sample and zero otherwise. For contextual analysis to be useful, the interactions must be significant. That is, the coefficients on the explanatory variables must differ in the contextual sample. A Chow test for the joint significance of the interactions will provide an overall test of the incremental usefulness of contextual fundamental analysis. Note, of course, that when the explanatory variable can only be defined in the specific context and not in the general sample, the potential pitfall described above does not apply. However, it is still important to show that the contextual explanatory variable is not subsumed by more general fundamental variables.

4. Conclusion

Contextual fundamental analysis provides a natural and promising avenue for future research. However, to leverage the potential contribution of such research, it is important that it be carefully motivated and executed. In this paper I have summarized three key criteria to guide future research on contextual fundamental analysis:

1. The selected context must be carefully motivated, with the expected benefits of conducting an analysis in the context being fully articulated;
2. The contextual analysis model must be tailored to the specific context, with the motivation for selecting the context guiding model specification; and
3. The superiority of the contextual fundamental analysis model over more general alternatives must be clearly demonstrated.

Finally, one must recognize that the contribution of contextual research depends on the economic significance of the context. This point is highlighted by the recent spate of papers on Internet firms. While many of these papers have been hastily crafted and use relatively small samples, they have been embraced by many in the academic community because of the perceived importance of the Internet. By the same token, a contextual analysis of firms in (for example) the trucking industry is unlikely to be similarly embraced regardless of its quality, because it is likely to be perceived as lacking economic significance.

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