6
Using Regression Analysis to Assist Audit Judgments in Substantive Testing

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Introduction

Over the years there has been some debate over the use of analytical procedures in auditing, particularly non-statistical procedures to derive substantive assurance. SAS 56 [AICPA, 1989] clarified the process involved in substantive procedures, but did not solve such audit questions as “How much work is enough?” There has been less debate over statistical analytical procedures, which usually incorporate regression analysis, perhaps because the level of use by auditors is not as widespread. The very term “regression analysis” is forbidding, and auditors, who are finally becoming more comfortable with sampling (as long as you don’t mention the term statistics!), do not tend to show enthusiasm for statistical tools unless they are packaged in a very friendly fashion.

Our firm is fortunate to have a regression tool that our auditors feel comfortable using. STAR (Statistical Techniques for Analytical Review) is a software tool that assists the performance of substantive analytical procedures by using regression analysis to model the relationship between an amount being tested and data expected to be predictive of the amount. It is designed to help auditors perform substantive analytical procedures in the context of an audit framework, and it builds upon the basic concepts involved in any substantive analytical procedure.

STAR was developed by our firm and has been used in the audit practice since 1971. We have recently updated the software, giving it a more modern user interface and making minor enhancements to the reports and messages provided by the software to improve the information available to the auditor. The enhancements were based on prior experiences with STAR and a fresh challenge of the tool against the requirements of SAS 56. However, the key features and the calculations remain unchanged.

One such key feature of STAR is the inclusion of an “audit interface” that melds professional judgments about materiality and assurance with the application of regression analysis. This feature computes thresholds based on auditor judgments and thereby identifies differences between the recorded amounts and the expectations that are sufficiently unusual to warrant further investigation.

We do not propose to discuss the calculations and statistics included in STAR in detail. Rather, we want to focus on the use of STAR for substantive testing, and how STAR assists auditors in making the judgments required in any substantive analytical procedure.