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LITIGATION AND VALUATION ADVISER

Helping Litigants

With a large staff dedicated solely to litigation, fraud, and valuation consulting, we deliver competent, credible service to businesses, municipalities, not-for-profits, and high net worth individuals. We are respected by both the plaintiff and defendant bar, and prosecutors at the state and federal levels.

Statistical Analysis: Your Fraud Early Warning System

Despite implementation of the Sarbanes-Oxley Act and other regulatory reforms, fraud remains an enormous problem for U.S. companies. In the Association of Certified Fraud Examiners' (ACFE's) 2010 *Report to the Nations on Occupational Fraud & Abuse*, global survey participants estimated that companies lose 5% of their annual revenues to fraud — and nearly one quarter of the frauds involved losses of at least $1 million.

Simple approaches

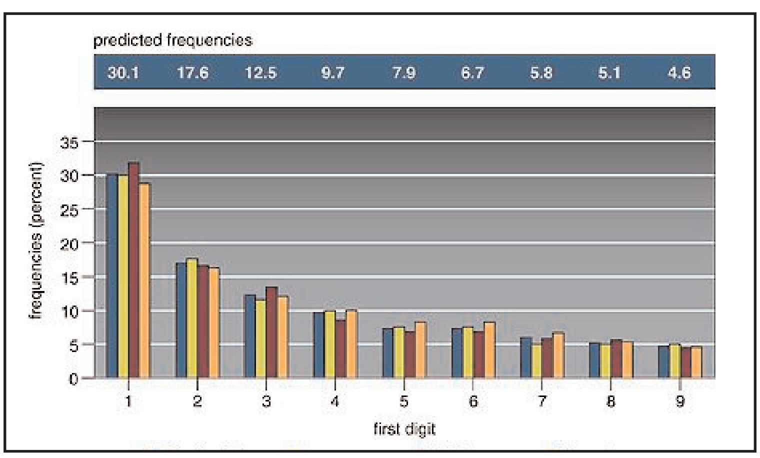
Forensic accountants use a variety of techniques to detect fraud, including statistical analysis, which can identify anomalies that call for further investigation. Increasingly, companies are using statistical tools internally to detect signs of fraud as early as possible. In many cases, a simple computer program or spreadsheet is all you need.

One effective approach is to search for duplicate invoice numbers or transactions, or even for dollar amounts, which may indicate that numbers have been rounded. More sophisticated fraud detection methods include financial ratio analysis, which identifies trends that may be symptomatic of fraud, and Benford's Law, a tool that can reveal whether numbers have been manipulated.

Data that isn't random

According to Benford's Law, in sets of random data, numbers beginning with smaller digits occur more frequently. Numbers beginning with 1, for example, occur about 30% of the time, numbers beginning with 2 occur about 18% of the time, and so on, down to numbers beginning with 9, which occur less than 5% of the time.

When fraudsters attempt to manipulate numbers in certain financial documents, this pattern becomes skewed. Indeed, it's nearly impossible to manipulate data so that it conforms to Benford's Law.



Benford's Law predicts a decreasing frequency of first digits, from 1 through 9. Researchers have tested Benford's Law for numbers appearing on the front pages of newspapers, the 1990 U.S. Census, and the Dow Jones Industrial Average and found the results follow Benford's Law within 2 percent.

Applying Benford's Law

To use Benford's Law as a fraud detection tool, you can run a spreadsheet program designed to examine the distribution of first digits in random sets of numbers and calculate the frequency with which the digits 1 through 9 occur. The spreadsheet can be converted into a chart that highlights any significant deviations from the patterns the rule predicts. A chart that shows, for example, that 20% of the numbers in a data set begin with 9 and only 10% begin with 1 may indicate fraud.

However, Benford's Law and other statistical tools don't *prove* fraud. Often, innocent explanations lie behind suspicious patterns. That's why it's essential to enlist the help of a fraud expert when your internal investigations suggest something's wrong with your numbers.

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