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The Effective Use of Benford's Law to Assist in Detecting Fraud in Accounting Data

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Benford's law has been promoted as providing the auditor with a tool that is simple and effective for the detection of fraud. The purpose of this paper is to assist auditors in the most effective use of digital analysis based on Benford's law. The law is based on a peculiar observation that certain digits appear more frequently than others in data sets. For example, in certain data sets, it has been observed that more than 30% of numbers begin with the digit one. After discussing the background of the law and development of its use in auditing, we show where digital analysis based on Benford's law can most effectively be used and where auditors should exercise caution. Specifically, we identify data sets which can be expected to follow Benford's distribution, discuss the power of statistical tests, types of frauds that would be detected and not be detected by such analysis, the potential problems that arise when an account contains too few observations, as well as issues related to base rate of fraud. An actual example is provided demonstrating where Benford's law proved successful in identifying fraud in a population of accounting data.

INTRODUCTION

In the past half-century, more than 150 articles have been published about Benford's law, a quirky law based on the number of times a particular digit occurs in a particular position in numbers (Nigrini 1999). In the past 10 years a subset of these articles have promoted the use of this law (the study of digits or digital analysis) as a simple, effective way for auditors to not only identify operational discrepancies, but to uncover fraud in accounting numbers. Recent audit failures and the issuance of Statement on Auditing Standard No. 99, *Consideration of Fraud in a Financial Statement Audit* (AICPA 2002) have set the profession in search of analytical tools and audit methods to detect fraud. Specifically, SAS No. 99 (paragraph 28) reiterates SAS No. 56 in requiring auditors to employ analytical procedures during the planning phase of the audit with the objective to identify the existence of