

BOOK REVIEW

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Forensic Analytics: Methods and Techniques  
for Forensic Accounting Investigations

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By Mark J. Nigrini, PhD

John Wiley & Sons, New Jersey, 2011 (480 pages, \$95 hardcover, \$56.83 Kindle edition)

*Reviewed by Michael Goldman, MBA, CPA, CVA, CFE, CFF*

There are a lot of books that discuss forensic accounting techniques. There are a lot of other books about how to use Microsoft Office products. *Forensic Analytics* is one of the very few books that does both, and that is why I appreciate it so much.

My professional library has many books on analysis techniques for fraud detection, data modeling, and data analysis. Because they all seem to assume I have access to one of the large (and expensive) data analysis or statistical software programs on the market, I have read each of them exactly once. Buying expensive software and getting a case large enough to justify the cost is a chicken-and-egg problem that I have so far been able to avoid by analyzing small and mid-sized cases with Access and Excel. Understanding the analysis techniques, however, is much easier than programming them in real life.

Access and Excel are very powerful programs, but even Microsoft reckons that most users utilize less than 10 percent of all the features and functions available. Another section of my library is filled with books designed to help me get more out of these programs—books

on using Microsoft Office, data analysis with Excel, Excel charts, Excel formulas, programming in VBA, combining spreadsheets with databases, etc. The problem with these is that they are written for too broad an audience, and so the examples that are given usually have no perceivable relation to forensic investigation. For example, I've probably used the LOOKUP functions in spreadsheets more than any other set of functions over the past decades. LOOKUPS have so many fantastic business applications, but the example in my functions book uses LOOKUPS to calculate grade point averages. Banal examples such as this often make the reader move on without really appreciating the incredible power of the function.

*Forensic Analytics* starts with three chapters devoted to Microsoft Office—one each on Access, Excel, and PowerPoint. Right off the bat, there were tremendously helpful hints for functions that I didn't know about or once knew and have since forgotten. Some examples are:

- Access Database Documenter documents and supports the procedures that were used, and Table Properties allows in-program documentation of what you were thinking as you

created each table or query. I will be glad to use this on my next case rather than keep running notes in a separate Word file.

- Data Bars in Excel let you quickly visualize the relative sizes of computed numbers rather than having to read each number or continually resort your data.
- Union Queries in Access can run multiple queries in one step.
- Picture Styles polish graphic presentations in PowerPoint.
- Numerous data-parsing and formatting techniques.

I've always been too busy, luckily enough, to take courses on or get training in the Microsoft Office products. I started with Lotus, moved up to Quattro Pro, and grudgingly migrated to Excel in the mid-90s when the maker of Quattro Pro went out of business. Same with databases: I went through Dbase, FoxPro, and Paradox (still my favorite) before Access effectively became the most significant affordable and powerful database software choice. My relationship with Access has been one of both love and hate—it is indispensable to my practice, but I've used it painfully in baby steps, doing eight or

nine sequential steps to clean and prepare my data when intuitively I knew there had to be more efficient ways. I found a lot of those better ways in *Forensic Analytics*.

After the introduction to the software, the remainder of the book deals with the analysis and interpretation of data. There are four chapters on Benford's Law. Yes, there really is that much to say about Benford's Law. I never really appreciated the depth of Benford until I saw the actual data analysis and how it all flows into a final product. Other chapters cover time-period analysis, Largest Subsets and Largest Growth tests, identifying anomalies using the Relative Size Factor test, looking for abnormal duplications, data correlations, time series analysis, and risk assessments.

Whatever impressive-sounding name you give it, much of forensic analysis is defining what you expect to see in the subject being analyzed, and then finding the anomalies. In about as low-tech an example as I can think of, I recently had a case which concluded when, after reviewing 11 cases of meticulously documented transactions, I noticed one anomaly—one capital expenditure that was missing some paperwork. This anomaly led to proving that the subject of the investigation had used company funds for a capital expenditure on his home, and he then committed a second felony when he perjured himself about it in deposition.

All of the methods discussed in *Forensic Analytics* use this same principle: find the unexpected or different items, but do it digitally using hundreds of thousands of transactions or data points. For example, in a second-order Benford test detailed in the book, the data was graphed as in Figures 1 and 2.

Since the data is expected to follow the curve, there is clearly an anomaly at 90. This anomaly does not automatically mean there is fraud, but it does give the

FIGURE 1: FIRST-ORDER BENFORD TEST

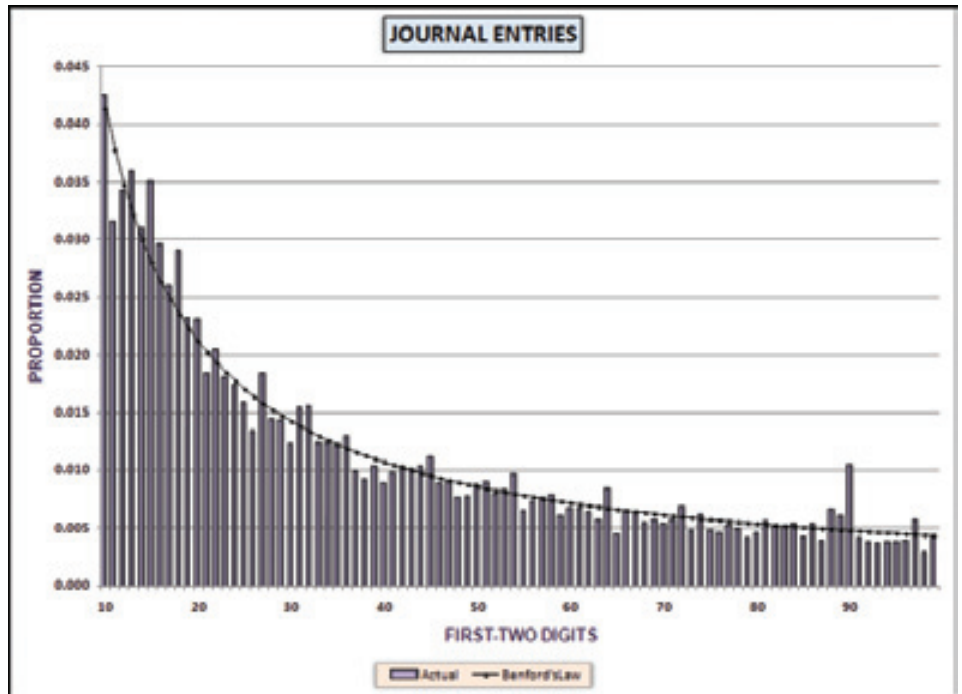
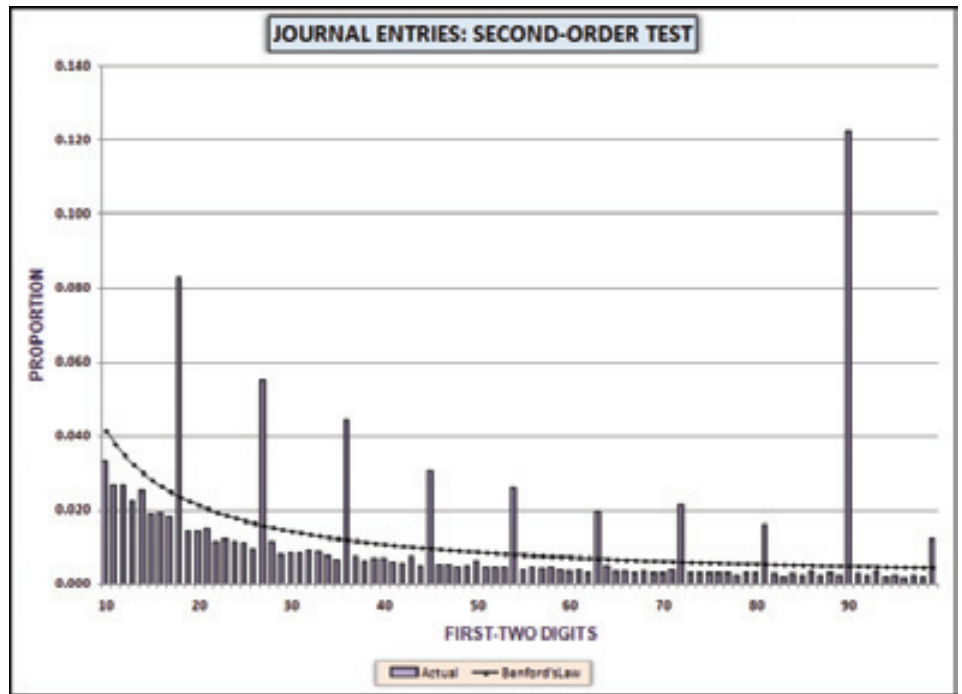


FIGURE 2: SECOND-ORDER BENFORD TEST



Figures 1 and 2 reproduced with author's permission

investigator an excellent target to focus on and resolve. In chapter after chapter, the author shows how to massage the data to help those not-so-obvious anomalies pop out.

Each chapter starts out with a brief discussion of the tests that are going to be demonstrated. The demonstrations are detailed, giving the exact commands to use in Access or Excel plus screenshots of what it would look like if you were following along on your computer. In the event that you really do want to follow along on your computer, there is a companion website from which you can download the data used in most (but not all) of the examples, and the files that were actually used in the screen shots. The web site isn't as slick as the book, but is still a very helpful touch.

The author, Mark Nigrini, has a PhD in accounting. He also minored in statistics, which is quite obvious from the text. Nigrini is an associate professor, teaching auditing and forensic accounting. His book is written like a textbook and flows nicely, with distinct chapters that introduce, teach, show, and summarize. It accomplishes its purpose of showing readers how to use Microsoft Access and Excel as their primary data analysis tools to find exceptional, irregular, and anomalous records that are buried in large data populations.

*Forensic Analytics* is well written, but it is not a book you read for fun. There were a few places where instructions such as "Each of the descriptive words in the query name should be capitalized" were inadequately explained and it was not

clear if failure to adhere would blow up your analysis or just annoy your professor into giving you a lower grade. That is really my only negative criticism of this book. I highly recommend it to forensic accountants who are actively analyzing data, whether they are using Microsoft Office products or more focused software such as IDEA Data Analysis. The tips and techniques lavishly illustrated in *Forensic Analytics* will benefit both new and experienced practitioners. **VE**

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