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AMERICAN JOURNAL OF FAMILY LAW (PRE-PUBLICATION COURTESY COPY)

*Is The Moneyed Spouse Lying About The Money?©*

By Darrell D. Dorrell, CPA/ABV, MBA, ASA, CVA, CMA, DABFA, CMC

Gregory A. Gadawski, CPA/ABV, CFE, CVA

Thomas S. Brown, CPA/ABV, CVA

## BACKGROUND

Is the moneyed spouse<sup>1</sup> lying about his/her money? You are confronted with this chronic question because you and your client can “sense,” “see” and “feel” the discrepancies between lifestyle and reported income. But convincing the court is another matter.

The court can be persuaded by the definitive evidence forged by forensic accounting techniques. Regrettably, few CPA/experts can decipher (or even identify) pertinent practices.

Even basic forensic accounting techniques are not taught in a typical accounting curriculum. Paradoxically, 200-300 forensic accounting techniques merit consideration and new techniques are continually developed. Therefore, CPAs seeking forensic accounting expertise are compelled to self-educate and/or supplement their skills with constant incremental training, education and research.

The specific forensic accounting techniques that apply depend, of course upon the nature of the marital estate, business interest(s) if any, extent of record keeping, and other facts and circumstances. However, the techniques apply to a broad spectrum of circumstances - *even deficient record keeping and/or deceitful production*. Significantly, their self-illustrating formats produce compelling exhibits and often apply to multiple facets, e.g. asset/income identification and distribution, spousal support, child support, etc.

Forensic accounting guidance is essential in even seemingly simple divorce matters. Forensic accounting investigation serves as the “GPS” (global positioning system) that continually guides the divorce process from initial filings through ultimate resolution. Therefore, it is vital that forensic accounting resources be deployed at the earliest possible point, i.e. *before* the initial petition has been filed. Failing to consider forensic accounting guidance throughout an assignment is akin to sailing the world and referencing your GPS only erratically – calamity is inevitable.

Therefore, this article is constructed so that you can use the contents to direct your CPA/expert in his/her investigation into the evidence. Note: most marital estates lack even rudimentary financial statements except, perhaps for the income tax returns of the respective business interests. Even then, income tax returns are often a poor substitute for financial statements. Therefore, the techniques that follow are applicable whether or not genuine financial statements exist.

<sup>1</sup> The spouse holding majority control of marital assets and/or income.

## EXAMPLES OF FORENSIC ACCOUNTING IN DIVORCE

The following actual examples (partially disguised for confidentiality) illustrate how forensic accounting techniques can resolve uncertainty in divorce matters – large or small, complex or simple, low-dollar or high-dollar, contentious or amicable (if such a condition exists in divorce).

### THE “FORGETFUL” WIFE

Husband of a divorcing couple suspected wife of underreporting to the court her income as a medical sales representative for a prosthetics distributor. Wife’s cancelled checks and bank statements produced through the first round of discovery were reviewed and constructed into a simple “Item Listing” schedule (described below). For cost-effectiveness, only items (deposits, disbursements and transfers) exceeding \$5,000 were listed. Simple tracings and comparisons of the cancelled checks identified two important discrepancies:

- ❑ First, a review of the bank routing numbers identified eight (8) previously *undisclosed* bank accounts. The accounts showed aggregate deposits exceeding \$600,000 over two years which was in stark contrast to wife’s claim of \$50,000 annual income. A portion of the deposits was accounted for by a property sale, but the remaining deposits were unaccounted for. Wife’s practice of opening and closing multiple accounts required offsets to avoid double counting opening deposits and interbank transfers.
- ❑ Second, the deposit amounts significantly exceeded the amounts shown on the Federal Forms 1099<sup>2</sup> that she claimed to have received from her employer. This was an unexpected finding since the 1099s already produced tied out to her *signed and filed* income tax returns.

Based upon an affidavit detailing the preceding findings the court directed additional discovery which included authorization to depose wife’s employer. Although wife eventually alleged that she had “forgotten” about some records, and claimed to have finally produced everything it was evident that substantial bank and check records were still missing.

Regardless, analysis proceeded with the following results:

- ❑ During deposition wife’s employer admitted that he had agreed to provide two *separate* 1099s to wife in order to “help her out” in her divorce. After being informed of the potential consequences, the employer elected to cooperate and provided payroll records that were compared to wife’s Item Listing. Note that such deceit would not have been uncovered without discovering the 1099 discrepancy.

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<sup>2</sup> Form 1099-MISC is often used to report payments for services for a trade or business by people not treated as employees. Typically these people are classified as independent contractors. For example, outside salespeople are often treated as independent contractors.

- ❑ Wife had been depositing the undisclosed 1099 earnings into other (previously undisclosed) bank accounts, some of which were eventually transferred into the other bank accounts; and
- ❑ Wife had ultimately opened a total of eleven (11) additional bank accounts (in addition to the one disclosed account) including four (4) showing joint ownership with her out-of-state mother. Wife used the accounts to hide her total income and believed that such action would obscure the trail of activity.

As expected, the court was less than pleased with wife's dishonesty and cited the forensic accountant's work as foundational to his decision. He directed that after undisputed marital assets and liabilities were resolved that the wife:

- ❑ Pay all husband's attorney's fees, and the forensic accountant's expert fees (about \$15,000, including testimony and exhibits);
- ❑ Pay husband for one year's understatement of income, about \$80,000; and
- ❑ Pay husband 50% of all remaining account balances, including those held *jointly* with her mother, estimated at \$200,000. Wife's mother's reaction to the ruling is unknown, but one can surmise that she shared the judge's displeasure with wife.

#### **THE "GOOD BROTHER"**

Wife of a divorcing couple believed husband had abandoned ownership of his high-end finish carpentry business to his brother to avoid asset distribution and spousal support. Husband countered that he was merely acting as a "good brother" since husband had actually "sold" the business to his brother (for \$6,000). Husband was now working as an employee of the (allegedly different) business. Therefore, husband claimed no fair market value of the business was available for marital award.

The state's family law statutes precluded action against a third party for assets transferred out of the marital estate. Consequently, wife's attorney was compelled to proceed with an alternative approach, i.e. a civil action to convince the court of a fraudulent transfer by husband to his brother.

The state's fraudulent conveyance statutes followed UFTA (Uniform Fraudulent Transfer Act) and thus required "badges of fraud" as evidence. Forensic accounting analysis of the financial, operational and related records of the finish carpentry business was initiated. Likewise, analysis of deposition transcripts, videos of personal assets and related records were investigated. However, wife and husband each accused the other of "disposing" of the detailed business records which appeared to prevent further investigation. The forensic accountant applied Benford's Law (described below) to his analysis to compensate for the lack of data.

The Benford's Law analysis illustrated results that indicated husband's purported business records contained "invented" amounts that would not have occurred during the operation of the business. Consequently, his claimed sale amount was deemed immaterial to the likely (but undetermined) fair market value of the finish carpentry

business. Husband's business was shown to generate \$125,000 annual pre-tax income even though his business income tax return showed losses or nominal income for all years disclosed.

Additional forensic accounting findings included:

- ❑ Husband testified that he "stopped running" and "sold" the business in March 2003;
- ❑ Corporate documents showed that brother had incorporated his business April 1, 2003;
- ❑ Husband's business was named XYZ Construction and Development, while brother's "new" business was named XYZ Development and Construction, Inc.
- ❑ All six of husband's employees were re-employed by brother's business;
- ❑ All of husband's customers continued to do business with brother without interruption;
- ❑ The same phone numbers were used by the "new" company;
- ❑ Husband continued to drive one of the company trucks supposedly now owned by brother's company; etc.

Testimony and a report from the forensic accountant were cited by the court as crucial to the conclusion of a fraudulent transfer. Coincidentally, the judge's undergraduate coursework was in social science statistics, thus the Benford's Law technique was compelling evidence to him.

The court concluded:

- ❑ A fraudulent transfer of the finish carpentry business had indeed occurred when husband allegedly "sold" the business to his brother for substantially less than fair market value;
- ❑ Wife's forensic accountant's expert fees were offset from husband's award; and
- ❑ The finish carpentry business had to be valued with the cost shared 75% and 25% between husband and wife, respectively.

#### **HUSBAND'S COMMUNITY PROPERTY "MISUNDERSTANDING"**

Wife, a physician, married husband, a horse trainer. During the seven years of marriage in a community property state wife earned virtually all the income and established a high-end family medical clinic. Although husband reported nominal income from his horse training business he expected to receive substantial assets and spousal support thanks to their community property status.



Wife's attorney engaged a forensic accountant to analyze husband's records to determine whether they were accurate. Using the "Net Worth" technique (described below) it was proven at trial that husband's income was materially underreported and thus misrepresented to the court. Further, the forensic investigation yielded previously undisclosed documents evidencing husband's intent to establish community property with regard to his real property.

The court ordered an award substantially in favor of wife to serve as punitive to husband, and cited the forensic accountant's work as foundational to his decision. The outcome resulted in wide departure from husband's hoped-for community property distribution "windfall."

#### **WIFE'S METH ADDICTION WAS "NOT ENOUGH"**

Husband, a periodontist was contacted by his bank about NSF activity coincident with the unexpected depletion of his clinic's payroll account. Husband quickly determined that wife, a dental hygienist had been altering clinic checks and credit card transfers for her own deposit. It was the "last straw" of many difficulties for the husband, thus he obtained a signed and notarized confession from wife and initiated divorce proceedings.

Pursuant to separation husband purchased a home for wife and children to live near the children's school. However, it soon became clear that wife had stolen the money to support a methamphetamine addiction. Therefore, husband immediately sought custody of their two children, ages 3 and 4. During that time he learned that wife's live-in boyfriend was probably dealing meth from the home purchased by husband for wife. Coincidentally, concerned neighbors had kept a log of times when the young children had been locked into the unattended home for several hours. Finally, the 4 year old son claimed that the boyfriend "hit" him often.

Husband sought interdiction from Child Protective Services, but the circumstances of the case compelled "more evidence" before the court would intervene. Consequently, husband's attorney sought a forensic accountant who could "persuade" the authorities to prosecute wife for theft.

Unfortunately, despite acknowledging the problem law enforcement authorities (police and prosecution) were reluctant to prosecute for theft because:

- ❑ Even though wife had signed a notarized confession the evidence had not been obtained within a strict chain of custody and wife was likely to contest it.
- ❑ Even though wife stole funds from a business (i.e., the dental "P.C.") in which she held no interest, their husband-wife relationship would make a jury decision problematic;
- ❑ The couple's young children could result in a jury sympathetic to the "plight" of wife;

- ❑ The \$70,000 stolen by wife was “small” in comparison to other embezzlements in the jurisdiction, thus authorities were reluctant to invest resources into a matter that might not result in a conviction; and
- ❑ Authorities hoped that “over time” sufficient evidence would be found for CPS to intervene on behalf of the children.

Working with husband’s attorney the forensic accountant used basic techniques to build the detective’s and prosecuting attorney’s case “for” them. Specifically, he:

- ❑ Introduced husband to the local district attorneys to obtain their guidance regarding the jurisdictional process which had to be followed;
- ❑ Directed the periodontist’s Office Manager to conduct certain tasks in order to keep forensic accounting fees down;
- ❑ Formatted the checks and credit card transactions according to statutory offense (e.g., alteration, forgery, identity theft, money laundering) thus obtaining multiple counts;
- ❑ Assembled a master “case file” notebook which was to contain all the evidence to support law enforcement’s efforts;
- ❑ Included photos of the children in the case file;
- ❑ Included photos of the wife (pre-addiction) in the case file;
- ❑ Identified the specific checks and credit card records requiring subpoena;
- ❑ Worked closely with the detective in order to assure flow through the courts and eventual prosecution.

As of this writing wife has completed one rehabilitation treatment, husband has temporary custody of the children, wife and boyfriend continue to live in the home husband purchased, and wife’s embezzlement trial (or plea bargain) is imminent.

#### **WIFE’S VALUATION “EXPERT” OVERLOOKED A DETAIL**

Wife and husband had been married 35 years, separated nearly 25 years, but had never sought a divorce. They were, in fact amicable in most respects including family events with children and grandchildren. Wife finally sought divorce and her attorney engaged a valuation “expert” with whom he had worked several times.

A key disputed marital asset was a fractional ownership interest in a real estate holding and development company. It had been formed by husband’s family (Subchapter “S”) a few years before the marriage and had appreciated substantially in recent years.

Since many of the original records were lost over the years, the records available for analysis were inconsistent and incomplete. However, wife’s valuation “expert” applied

gross conclusions to value since he reasoned that that was what “he would have done” under the circumstances. The valuation “expert” assisting wife acknowledged that he had no forensic accounting capabilities.

Husband’s attorney engaged a forensic accountant for valuation. However, the forensic accountant recommended preliminary techniques that should be conducted before beginning the valuation analysis. The forensic accountant used indirect analytical methods, including constructing a “Cash Flow Statement” (described below) from the partial records available to him.

Based upon his analysis he observed that the company’s 35 year-old buy/sell agreement (previously overlooked) had apparently been invoked several times, thus compelling its consideration. Wife’s expert had experience only in valuation and thus was unable to effectively counter with any equivalent forensic accounting techniques.

Based upon the forensic accounting findings wife was persuaded to settle before trial at an amount about \$4 million less than she had been told by her alleged expert. Husband’s attorney attributed the success to the investigative analysis executed by the forensic accountant and stated that the \$23,000 in fees produced an excellent “return on investment.”

## **FOUNDATIONAL FORENSIC ACCOUNTING METHODS**

The following forensic accounting techniques are described below in ascending order of complexity and sophistication, i.e. least complex to more complex. They can be considered as progressive and complimentary among one another. Consequently, they can be executed individually and/or collectively in an exploratory manner. The presentation order does not suggest that the more complex the better; indeed, sometimes the most effective observation derives from the simplest technique.

Their structure enables you to denote the extent of investigation that you seek from your forensic accountant.<sup>3</sup> ***Note that the following techniques are by no means exhaustive, nor will every technique be necessary in every case.*** But at least you will have a preliminary “shopping list” that will enhance the results of your respective matters.

Significantly, these forensic accounting techniques can be applied to virtually any kind of financial data, ranging from “shoe box” data, to hand-written check registers, to income tax returns, to compiled/reviewed/audited financial statements, and anywhere in between.

The forensic accounting methods profiled include:

- ❑ Full-and-False Inclusion
- ❑ Genogram

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<sup>3</sup> Note that the ultimate scoping of involvement should be made by the forensic accountant.



- ❑ Entity(s) Chart
- ❑ Timeline Analysis
- ❑ Link Analysis
- ❑ Item Listing
- ❑ (Modified) Net Worth
- ❑ Source and Use of Cash
- ❑ Proof-of-Cash
- ❑ Financial Statement Analysis (Basic)
  - Financial Statements Defined
  - Generic Financial Statement Analysis
  - Varying Measurement Baselines
  - “Cooking” the Books
  - The Cash Flow Statement
  - Sustainable Growth Rate (SGR)
  - Gross Profit Margin – “Too Much”
  - Gross Profit Margin – “Too Little”
- ❑ Digital Analysis
  - Gap Analysis
  - Duplicate Numbers Test
  - Rounded Numbers Test
  - Stratification Percentage Comparison
  - Benford’s Law

#### FULL-AND-FALSE-INCLUSION

The *full-and-false inclusion* technique is **foundational** to investigation, yet is foreign to many CPA/experts and thus is routinely overlooked. It is the *single most important element* of forensic accounting yet is unknown or disregarded by “typical” CPAs. The disregard of full-and-false inclusion results from CPAs’ human nature (yes, most CPAs are human) because:

- ❑ People tend to “do what they know” instead of what needs to be done, therefore,
- ❑ CPAs naturally focus on the “books and records” since that is where the *numbers* reside.

Unfortunately, deceitful moneyed spouses conceal assets and income *outside* the (disclosed) books and records. Consequently, unless full-and-false inclusion techniques are continually applied CPAs can fall prey to the old (bad) gag:

- ❑ During her nightly stroll a woman notices a man looking for something under a

street light;

- ❑ The woman asks: *"What are you looking for?"*
- ❑ The man replies: *"I lost my wallet across the street."*
- ❑ The woman asks: *"If you lost it across the street why are you looking for it here?"*
- ❑ The man answers: *"The light is better here."*

The full-and-false-inclusion test is comprised of continuous actions throughout the assignment to insure that all extraneous data is excluded, and only pertinent data is included. In effect, the full-and-false-inclusion test serves as the real-time map continuously constructed by the "GPS" capabilities of forensic accounting.

It is essential that full-and-false inclusion be continually deployed to sustain and refresh the appropriate "universe" of data and parties under investigation. When skillfully deployed full-and-false inclusion results yield the "surprise" and "forgotten" asset and income items concealed by the moneyed spouse. In summary, full-and-false inclusion can prevent untrained CPAs from spending unproductive time in the books and records because, *"The light is better here."* Also, see "Genogram," "Entity(s) Chart," "Timeline Analysis," and "Link Analysis," below.

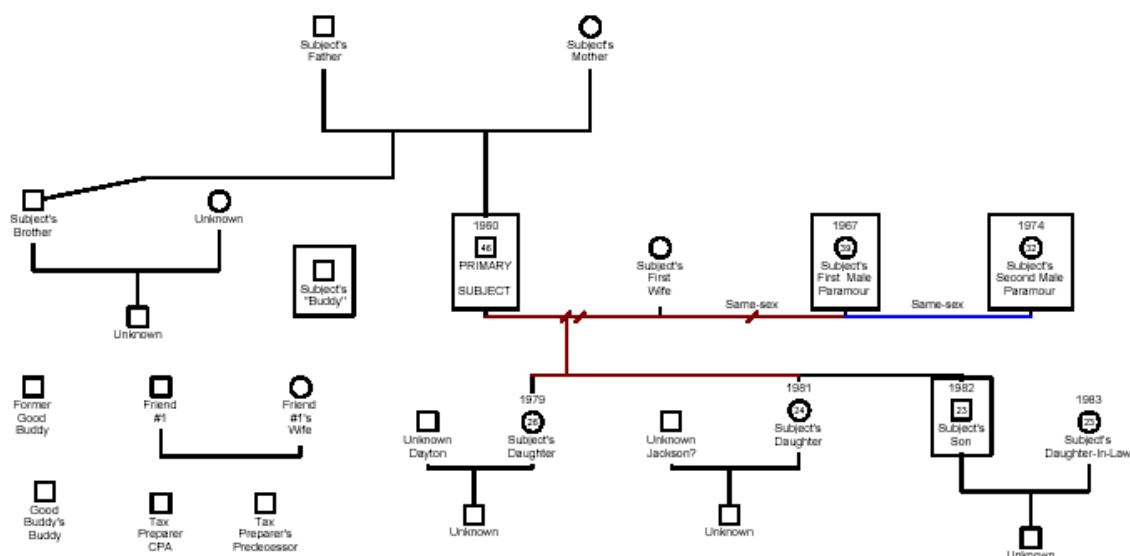
## **GENOGRAM**

A *genogram* depicts personal relationships between spouses and among related and unrelated target parties. Therefore it reflects prior and existing personal connections between and among all relevant parties. The genogram was first developed and popularized in family clinical settings by Monica McGoldrick and Randy Gerson.

The genogram maps out relationships that may otherwise be missed which can, in turn lead to asset and/or income diversion channels. It is typically prepared early in the assignment and continually refined in conjunction with additional analysis as the assignment progresses. Also, see "Full-and-False-Inclusion," above.

A genogram provides a facile means for the forensic accountant to capture and eventually explore personal relationships among related and unrelated parties. Once personal relationships are identified key indicators can lead to other parties meriting additional investigation. Therefore, likely diversions and/or concealment of assets can be thwarted.

The following diagram represents a simple form of genogram using genogram software, GenoPro. The software is very inexpensive (\$39), easy to use and can be purchased at [www.genopro.com](http://www.genopro.com). The color-coded example illustrates how the former spouse, i.e. "Primary Subject" was married and divorced, and had two same-sex relationships. Also, it identifies his parents, siblings (and spouses), children and unrelated personal relationships, all of whom merit investigation for diverted income and/or assets.



## ENTITY(S) CHART

An *Entity(s) Chart* is a visual representation depicting entity(s) and owners, and the relationships among them. It is typically prepared early in the assignment and continually refined in conjunction with additional analysis as the assignment progresses. Also, see "Full-and-False-Inclusion," above.

Entity(s) charts can be useful predictors of asset and/or income diversion, particularly among seemingly unrelated entities. For example, identifying the formation date of an off-shore entity may be compared to funds decline, thus substantiating diversion. Also, identifying seemingly unrelated parties can indicate where further investigation is potentially warranted. See also, *Alter Ego Diagnosis to Find Potentially Hidden Assets in Divorce Cases*.<sup>4</sup>

The following example illustrates how complex entities and common ownerships of fractional and entire business interests can be readily illustrated. The example was used to demonstrate the subject's ownership interest in an allegedly "unassociated" business entity. Entity charts are easily prepared using the drawing tools contained in Microsoft Excel.

<sup>4</sup> *The American Journal of Family Law*, (Vol. 18. No.4, 2004), co-authored with Christine A. Kosydar.

**Legend:**

- Bold, 12 pt - Named party**
- Holding Company** (dashed border)
- Shaded - Operating Entity** (shaded box)
- Inactive Company** (dotted box)

**Entities Not Accounted For:**

- Earlier Acquisition #1, Inc.
- Earlier Acquisition #1
- Earlier Acquisition #2
- Earlier Acquisition #2 Company
- Acquired Subject of CITY #1
- Acquired Subject #1
- Earlier Acquisition #3
- Earlier Acquisition #3 Company
- Earlier Acquisition #4 Merchants
- Earlier Acquisition #5
- Earlier Acquisition #6Co.

**Entity Structure:**

- Target Subject of Washington, LLC** (Holding Company)
  - 100% **Target Subject of CITY #2, LLC** (Operating Entity)
    - 100% **Target Subject of CITY #3, LLC** (Inactive Company)
    - 100% **Target Subject of Vancouver, LLC** (Inactive Company)
  - 100% **Target Subject #1, LLC** (Operating Entity)
    - 19.748% **Acquired Subject #1, LLC** (Inactive Company)
    - 1.262% **Acquired Subject Sons, Inc.** (Named Party)

**Ownership Details:**

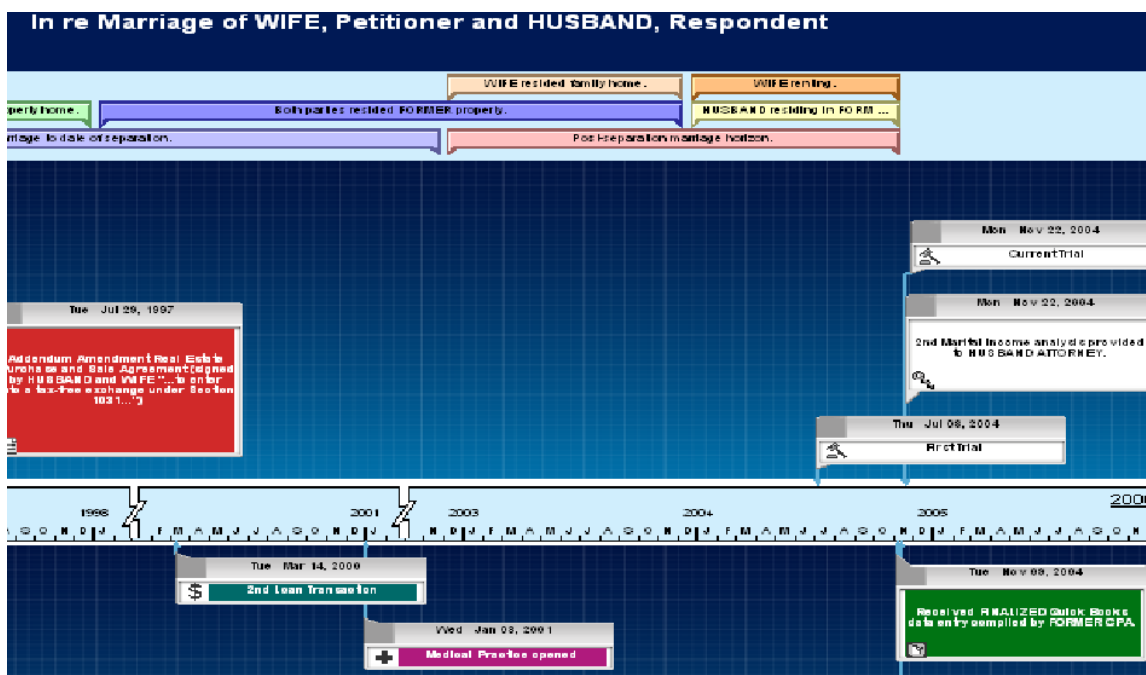
Entity	Shares	%
Owner	1,178,628	65.5%
Owner Children's Trust	-	0.0%
The Outside Investors Fund L.P.	589,314	32.7%
Legal Advisor	32,059	1.8%
<b>Total</b>	<b>1,800,001</b>	<b>100.0%</b>

Entity	Units	%
Owner	58,668	3.3%
Owner Children's Trust	1,119,960	62.2%
The Outside Investors Fund L.P.	589,314	32.7%
Legal Advisor	32,059	1.8%
<b>Total</b>	<b>1,800,001</b>	<b>100.0%</b>

A *Timeline Analysis* is a powerful tool for demonstrating causal elements of activity-based evidence, and also assists in validating parties' claims. The timeline analysis is a powerful tool because it portrays events in a "storyboard" format – just as the various events unfolded. Consequently, such output conveys high jury appeal. Also, see "Full-and-False-Inclusion," above.

There are many software tools that can produce useful timelines, including Microsoft Excel. However, inData Corporation has a very inexpensive product that permits hyperlinking a wide variety of file types, including video, audio, .pdf, photos, etc. Therefore, a timeline analysis built during the assignment can also serve as a key trial exhibit. The software, titled TimelineXpress® is very easy to use, inexpensive (\$129) and can be accessed in demo mode at [www.indatacorp.com](http://www.indatacorp.com).

The following example illustrates a partial timeline format built using TimelineXpress®. Note that when used on-screen with a computer projector the images are quite dynamic and hyperlink to nearly any type of electronic data including deposition transcripts and videos, .pdf documents, Excel spreadsheets, photographs, etc.



## LINK ANALYSIS

*Link analysis* is a subset of network analysis, and establishes associations (i.e., links) between and among objects, i.e. typically data but also includes people. For example, comparison of mailing addresses of company officers and the cell phone numbers they have dialed might connect them to significant financial transactions.

Link analysis identifies relationships among data and/or people that are not otherwise apparent from discrete isolated data. Link analysis can be quite data- and labor-intensive in cases containing large amounts of data. Indeed, the technique is increasingly employed in fraud detection, epidemiology, counterterrorism and other endeavors that use computer resources to analyze vast amounts of data.

However, link analysis is also effective in its simplest form. The following example illustrates via common color-coding how Secretary of State records were used to link parties and entities in a forensic accounting matter. The various colors indicate the "links" among the seemingly unrelated entities. Note how the Registered Agent is linked with several of the entities.

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 Darrell D. Dorrell

Entity Name	Registry Date	Principal Place of Business	Registered Agent
Hobbies, Inc.	8/11/1978	2301 N. Watermain Rd City ZIP	Old Attorney, P.C.
Watermain Marketing, Inc.	8/11/1978	Links to "Hobbies, Inc..."	Old Attorney, P.C.
Regional Purchasing, Inc.	8/11/1978	2301 N. Watermain Rd City ZIP	Old Attorney, P.C.
Hobbies, Inc.	2/23/1973	13367 Street Rd NE City ZIP	Old Attorney, P.C.
Example Dog and Cat Hospital, P.C.	7/31/1981	9876 SW Small Road Hwy Example ZIP	First Name Partner #2
The Spouse Company	8/12/1985	xxxxx SW Heather Road #620 Small Town ZIP	First Name Spouse, Jr.
Big-Ticket Services, Inc.	8/15/1985	Links to "The Spouse Company"...	First Name Spouse, Jr.
Big-Ticket Services, Ltd.	8/12/1985	Links to "The Spouse Company"...	First Name Spouse, Jr.
Spouse Partner Clinic Properties, L.L.C.	4/7/1995	9876 SW Small Road Hwy Example ZIP	First Name Spouse, Jr.
Spouse Partner Management Company of STATE, Inc.	4/7/1995	9876 SW Small Road Hwy Example ZIP	First Name Spouse, Jr.
Spouse Partner Management Company of STATE, Inc.	6/17/1996	9876 SW Small Road Hwy Example ZIP	First Name Spouse, Jr.
Csmall Townsed, P.C.	4/7/1995	433 Third St Small Town ZIP	First Name Spouse, Jr.
Ark Management, Inc.	4/7/1995	Links to Spouse Partner Management Co"...	First Name Spouse, Jr.
City Spouse Partner Clinic, P.C.	5/1/1996	9876 SW Small Road Hwy Example ZIP	C.First Name Spouse, Jr.
Town Square Spouse Partner Hospital, P.C.	11/22/1996	Address SW Main #100 Town, State ZIP	C.First Name Spouse, Jr.
Spouse Econometrics, Inc.	10/7/1998	xxxxx SW Heather Road #330 Small Town ZIP	First Name Spouse, Jr.
Hobby Toy Ventures, LLC	5/26/1999	P.O. Box 459 City State ZIP	New Attorney
Animal Allergy & Skin Clinic	8/12/1999	4100 SW 109th Beaverton 97005	First Name Partner #2
America's Doolhouse Company	8/20/1999	2301 N. Watermain Rd City ZIP	Old Attorney, P.C.
Racings Farm	10/22/2001	Address SW Alpine Road WL 97068	First Name Spouse (auth. rep.)
Racings Farm, LLC	10/22/2001	Address SW Alpine Rd WL 97068	First Name Spouse
Auto/Truck Specialties, Inc.	5/17/2002	Address SW Advance Road Town ZIP	Partner #3
Estates Shrunken, LLC	3/7/2003	xxxxx SW Heather Road #330 Small Town ZIP	New Attorney
High-End Dollars CStatePstateation	4/10/2003	Address SW Alpine Road First Namet Linn 97068	New Attorney
Tails & Paws	5/6/2004	Address SW Main #100 Town, State ZIP	James New Partner
Regional CollectState Cars LLC	12/12/2005	n/a	Partner #3
Regional TendonCars LLC	12/12/2005	Links to "Regional TendonCars LLC"...	Partner #3
Creative Transactions, Inc.	4/3/2006	n/a	Regional CollectState Cars LLC

## ITEM LISTING

The *Item Listing* technique is exactly as its name implies, i.e. a list of items. The items can consist of checks, deposits, transfers, etc. and can include all or only certain amounts, such as only those items exceeding \$5,000.

The item listing method is conducted by listing the respective items and then individually tracing the items for leads to other items, including previously undisclosed bank accounts, undisclosed payees, etc. The example below was used to identify eleven (11) previously undisclosed bank accounts in a marital dissolution matter.

The following example illustrates how unreported income and several previously undisclosed bank accounts were identified by tracing the bank routing number on cleared checks. The items can be further flagged through various techniques, including footnote references, "comments," color coding, etc.



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Darrell D. Dorrell

### PARTIES

EQUIP Medical Checks Paid to BW

Source: EQUIP Medical

Check #	Date	Payee	\$ Amount	1099	1040	Date Dep	Bank	Acct #	Bank per BW	Comment	Note
12187	9/3/03	BW	2,000.00				Note 4	153651xxxxxx	US Bank	joint account	4
12256	10/6/03	BW	2,750.00				Note 4	153651xxxxxx	US Bank	joint account	4
12309	11/6/03	BW	3,355.11				Note 4	153651xxxxxx	US Bank	joint account	4
12346	12/2/03	BW	4,042.08	\$ 12,147	\$ 12,147		Note 4	153651xxxxxx	US Bank	joint account	4
12409	1/6/04	BW	3,443.68				Note 4	153651xxxxxx	US Bank	joint account	4
12475	2/9/04	BW	2,252.40			2/13/04	US Bank	153555xxxxxx	US Bank		
12604	2/28/04	BW	5,555.77				Note 4	32770xxxxx	BOA-FL	missing statement	4
12612	3/3/04	BW	4,140.75				Note 4	32770xxxxx	BOA-FL	missing statement	4
12611	3/3/04	BW	2,000.00			3/15/04	US Bank	153555xxxxxx	US Bank		
12673	4/2/04	BW	4,592.85				Note 4	32770xxxxx	BOA-FL	missing statement	4
12672	4/2/04	BW	2,000.00			4/9/04	US Bank	153555xxxxxx	US Bank		
12722	5/3/04	BW	2,625.16				US Bank	153555xxxxxx	US Bank		x
12723	5/3/04	BW	5,232.98				Note 4	32770xxxxx	BOA-FL	missing statement	4
12780	6/4/04	BW	4,006.94				Note 4	32770xxxxx	BOA-FL	missing statement	4
12779	6/4/04	BW	2,000.00				US Bank	153555xxxxxx	US Bank		x
12836	7/7/04	BW	2,569.62				Note 4	4021xxxxx	First Indep.	unable to match	4
12835	7/7/04	BW	2,000.00				US Bank	153555xxxxxx	US Bank		x
12872	8/3/04	BW	2,758.51				US Bank	153555xxxxxx	US Bank		x
12873	8/3/04	BW	5,187.55			8/15/04	First Indep.	4021xxxxx	First Indep.		
12921	9/2/04	BW	2,000.00				US Bank	153555xxxxxx	US Bank		x
12922	9/2/04	BW	4,139.31			9/15/04	First Indep.	4021xxxxx	First Indep.		
12972	10/5/04	BW	1,960.00				US Bank	153555xxxxxx	US Bank		x
12973	10/5/04	BW	5,511.12			10/12/04	First Indep.	4021xxxxx	First Indep.		
13013	11/2/04	BW	2,000.00				US Bank	153555xxxxxx	US Bank		x
13014	11/2/04	BW	8,055.93			11/10/04	BOA Florida	54889xxxxx	BOA-FL		
13072	12/3/04	BW	2,857.69				US Bank	153555xxxxxx	US Bank		x
13073	12/3/04	BW	5,116.81	\$ 82,007	\$ 27,897		Note 4	763xxxxx	BOA-WA	unable to match	2,4,5

### THE MODIFIED NET WORTH METHOD<sup>5 6</sup>

The *modified* net worth method derives from the *net worth method* long employed by the Internal Revenue Service (IRS). The seminal and most high-profile application of the net worth method was used by United States Treasury officials to help convict Alphonse "Al" Capone, *Capone v. United States* 51 F.2d 609 (1931). Despite the indirect or circumstantial nature of the results, its acceptance by the courts is well documented over the years.

In order to remove the complexities of income tax law the net worth method was modified and popularized about 1974 as the *modified* net worth method by Mr. Richard A. Nossen, a former IRS Special Agent. (Nossen, Richard A. and Norvell, Joan W. "The Detection, Investigation and Prosecution of Financial Crimes, 2<sup>nd</sup>" Thoth Books, Richmond VA, 1993).

The technique is effective at demonstrating a spouse's apparent income by determining the increase in wealth indicated by measuring the year-to-year change in his overall net worth. Consequently, it can be shown that the spouse spent more than he had available to him from known, reported or legitimate sources. The excess then reflects underreported income sources.

<sup>5</sup> Dorrell, Darrell, D. and Gadawski, Gregory A., *Forensic Accounting: Counterterrorism Weaponry, United States Attorneys' Bulletin*, 2-Part Series, (May 2005, Vol. 53 No. 3), United States Department of Justice, Executive Office for United States Attorneys, Office of Legal Education co-authored with Gregory A. Gadawski, [http://www.usdoj.gov/usao/eousa/foia\\_reading\\_room/foiamanuals.html](http://www.usdoj.gov/usao/eousa/foia_reading_room/foiamanuals.html)

<sup>6</sup> Dorrell, Darrell D., "Valuation Forensics," *National Litigation Consultants' Review*, (Litigation Consultants, LLC – Vol. 5 Issue 7, December 2005).

For many years the courts (civil and criminal) have accepted the net worth method to infer (as *admissible* circumstantial evidence) that any excess of expenditures was made with funds from unknown and/or illegitimate sources.

Generally, the modified net worth method compares a year-end net worth estimate, say December 31, 2002 with the December 31, 2001 year-end net worth estimate, identifying an increase. Then, living expenses are added to that amount and income from known sources is deducted from the subtotal. The residual identifies the expenditures in excess of known sources of funds.

The general format of the modified net worth method year-end net worth estimates is depicted below.

Modified Net Worth Method	
Net worth as of December 31, 2002	\$\$\$\$,\$\$\$
Less: net worth as of December 31, 2001	<u>(\$\$,\$\$\$)</u>
Increase in net worth	\$\$,\$\$\$
Add: Living expenses	<u>\$\$,\$\$\$</u>
Total expenditures	\$\$\$\$,\$\$\$
Less: Income from known sources	<u>(\$,\$\$\$)</u>
Expenditures in excess of known sources of funds	<u><u>\$\$,\$\$\$</u></u>

The modified net worth method is readily assembled from even widely disparate and inconsistent evidence and records. Ordinarily the method is categorized by fiscal/physical year. However, it can also cover unusual time horizons such as from May 17, 1999 through February 20, 2002 to match pertinent statutory periods, key business events or marriage/separation dates.

An example case is illustrated based upon the following facts and circumstances:

- ☐ A female US citizen married a male who recently immigrated from the Middle East;
- ☐ The male's culture regarding personal finances was based upon secretiveness and non-disclosure, particularly towards females and non-Middle Easterners;
- ☐ The male's business was a merchandising importer that relied upon other Middle Eastern immigrants who dealt in cash-based businesses and transactions;
- ☐ The marriage date was May 17, 1999 and the separation date was February 20, 2002; and

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- ❑ The business records were very sparse and source documents were often coded in a manner known only to the male.

The following hypothetical schedule illustrates how the modified net worth method is used to demonstrate that the spouse had unreported funds. The respective lines are individually described following the schedule.

<b>Hypothetical Modified Net Worth Method</b>				
Line	ASSETS	Ref.	5/17/1999	2/20/2002
	Cash			
1	Currency	Test.	unk	\$71,000
2	Checking accounts	BR	1,732	8,434
3	Other accounts	BR	unk	5,100
	Undeposited items			
4	Traveler's checks	SR	-	9,000
	Time deposits			
5	60-day CD	BR	unk	5,000
6	120-day CD	BR	unk	12,000
7	Food stocks	SR	unk	2,932
8	Firearms, ammunition, explosives	SRS	unk	16,700
9	Computers, cameras, software	SRS	-	16,256
10	Automobile	BR	-	3,600
	Total Assets		1,732	150,022
	<b>LIABILITIES</b>			
11	Automobile loan	BR	-	1,900
12	Net worth, beginning and end		1,732	148,122
13	Less: Beginning net worth			1,732
14	Increase in net worth			146,390
15	Add: Personal living expenses	CES		61,748
16	Total expenditures			208,138
17	Less: Funds carried into country	Test.		3,000
18	Funds earned through employment	BR		19,976
19	Wire transfers from family	BR		17,000
20	<b>Expenditures in excess of funds</b>			<b>\$ (168,162)</b>

**Legend**

Test. = Testimony  
BR = Bank or other records  
SR = Subpoenaed records  
SRS = Subpoenaed records - subject  
CES = Consumer expenditure survey

The preceding hypothetical modified net worth schedule reflects the assets, liabilities, income and records determined through analysis of discovery. Each line is described by the following explanations.

Line 1 reflects the currency on hand at the as-of date. Note that the "Test." legend indicates that the subject spouse testified (in deposition) that he had no currency as of

the marriage date, May 17, 1999. It is essential that deposition testimony be obtained regarding initial cash balances to avoid a later “hoard” claim to circumvent the results of analysis.

Lines 2-6 reflect the amounts indicated on subpoenaed bank and related records. BR represents that the data is sourced via Bank or other records; SR represents that the data was obtained from subpoenaed records. (Naturally, any coding can be used as necessary.)

Line 7 reflects an estimate of the value of the ethnic food stocks in the spouse’s custody at the as-of date. SRS represents that the data is based upon subpoenaed records from the subject.

Lines 8-9 reflect the “cost” value of the firearms, ammunition and related sporting goods at the as-of date. Note that cost, and not fair market value is the basis for developing this analysis. Fair market value would distort the result.

Line 10 reflects the *purchase price* of the used automobile in the spouse’s custody. See previous comment regarding cost-based approach to developing the analysis.

Line 11 reflects the balance owing to an unrelated private individual as documented in a payment record.

Line 12 reflects the derivation of the net worth for both the beginning and ending periods by subtracting total assets from total liabilities.

Line 13 reflects the subtraction of the beginning net worth from the ending net worth.

Line 14 reflects the result of the items in Line 13, above, thus deriving the resultant increase in net worth over the respective time period.

Line 15 reflects an estimate of the spouse’s estimated living expenses for the respective period as derived by adjusted third-party information sources such as the Consumer Expenditure Survey (CES) <http://www.bls.gov/cex/home.htm>. Since records were unavailable for living expenses (except in very scattered instances) and he refused to cooperate by describing his living patterns, the CES data was applied. (Note that such data can be used as necessary for either/both single individuals or married couples.)

Line 16 reflects the result of adding Lines 14 and 15.

Line 17 reflects the amount that the spouse declared when he entered the marriage.

Line 18 reflects the total that the spouse claimed as earned by his employment during the period.

Line 19 reflects the money wired to him by his family during his tenure in the US.

Line 20 reflects the difference between the spouse’s expenditures and his claimed earnings, thus inferring that he has significant unknown and unreported sources of income, \$(168,162).

## THE SOURCE AND USE OF CASH METHOD<sup>7 8</sup>

The preceding modified net worth method can be useful when a spouse acquires relatively big-ticket items such as real estate, stocks and bonds, and tangible assets in general. Alternatively, a spouse living a low-profile, low-record existence would require a different analytical technique such as the *source and use of cash method*. This technique is also known by other descriptors, e.g. *cash flow method*, *spreadsheet expenditures method*, etc.

The source and use of cash method lists each identified source and use of cash (or other funds) by category for the respective years under analysis. As in the modified net worth method the years can be constructed for annual or other periods. The results of each method are *exactly the same* and sometimes the two techniques are used in combination to corroborate findings.

A hypothetical source and use of cash method is illustrated below.

Hypothetical Source and Use of Cash Method						
	1999	2000	2001	2002	Total	
<b>Line Known sources of cash</b>						
1 Earned in various jobs	\$ 1,736	7,845	136	10,259	\$	19,976
2 Wire transfers from family	4,000	700	11,000	1,300		17,000
3 Carried into country	3,000	-	-	-		3,000
<b>Total known sources of cash</b>	<b>8,736</b>	<b>8,545</b>	<b>11,136</b>	<b>11,559</b>		<b>39,976</b>
<b>Expenditures</b>						
4 Seized currency	unknown			71,000		71,000
5 Increase in checking account				6,702		6,702
6 Seized in other accounts				5,100		5,100
7 Increase in traveler's checks				9,000		9,000
8 Increase in time deposits				17,000		17,000
9 Seized food stocks				2,932		2,932
10 Seized firearms, etc.				32,956		32,956
11 Net automobile purchase				1,700		1,700
12 Personal living expenses	9,952	14,871	16,589	20,336		61,748
13 Total expenditures	9,952	14,871	16,589	166,726		208,138
14 <b>Expenditures in excess of funds</b>	<b>(1,216)</b>	<b>(6,326)</b>	<b>(5,453)</b>	<b>(155,167)</b>		<b>\$ (168,162)</b>

The preceding hypothetical schedule reflects the sources of uses cash attributed to the spouse based upon the various records collected and analyzed through discovery. Each line is described by the following explanations.

Line 1 reflects the amount that the spouse earned from employment during his tenure in the US.

Line 2 reflects the total wire transfers from his family.

<sup>7</sup> Forensic Accounting: Counterterrorism Weaponry...

<sup>8</sup> Valuation Forensics...

Line 3 reflects the amount of money declared by the spouse when he entered the US.

Line 4 reflects the currency in the spouse's custody that was determined at the as-of date. Note that identified assets are represented as *expenditures*. The corroborating theory is that the money was *available for expenditure* by the spouse, and failing inclusion would have eventually been expended since his outflows exceeded his inflows.

Line 5 reflects the increase in his checking account.

Line 6 reflects the other information contained in various accounts identified through discovery.

Line 7 reflects the increase in traveler's checks.

Line 8 reflects the increase in time deposits held in the spouse's name.

Lines 9-10 reflect information derived through discovery and analysis.

Line 11 reflects the net automobile purchase as derived by the difference between the purchase at cost and the balance owed.

Line 12 reflects the spouse's estimated living expenses for the respective period as derived by adjusted third-party information sources such as the Consumer Expenditure Survey (CES) <http://www.bls.gov/cex/home.htm>. Since records were unavailable for living expenses (except in very scattered instances) and he refused to cooperate by describing his living patterns, the CES data was applied.

Line 13 reflects the total expenditures for each respective year.

Line 14 reflects the difference between the spouse's expenditures and his claimed earnings, thus inferring that he has significant unknown and unreported sources of income.

The Total column aggregates the years to validate that the totals compare, \$(168,162).

Certain observations between the two schedules are significant.

- ☐ First, note that the results of the analysis are *exactly the same* for both methods, (\$168,162). Since the data used for each method derives from the same source no difference should result if the methods are properly executed.
- ☐ Second, the asset data, e.g. automobiles is cost-based, not fair market value-based. The cost basis enables an inference regarding the funds necessary to acquire the respective asset(s).
- ☐ Third, despite disparate time periods (one 32-month period for the modified net worth method, and 4-odd years for the source and use of cash method the results of the analysis are *exactly the same* for both methods, (\$168,162).



- ❑ Finally, note the Unknown section which indicates that yearly categorization was simply not possible for many items, and as demonstrated by the analysis was not even required in aggregate.

## PROOF OF CASH

The “proof of cash” technique is a lost art to CPAs. It used to be a routine audit procedure before risk-based auditing was implemented many years ago. Today, few auditors apply the procedure and fewer still are even aware of its existence. Regardless, it is an excellent technique to compare *actual* bank deposits, withdrawals and transfers to *reported* bank deposits and withdrawals.

The proof of cash technique is similar to a bank reconciliation, but is more detailed and extensive. It is sometimes labeled a “4-way bank reconciliation.” The technique validates whether a marital estate’s records reflect its bank deposits, withdrawals and transfers.

## Necessary Information

The information required to perform a proof of cash (example on the following page) is straightforward and consists of:

- ❑ All bank statements (obtain originals directly from the banks) for the respective period;
- ❑ The marital estate’s check register or equivalent which captures reported deposits and withdrawals for the same period;
- ❑ Listings with verified totals for:
  - Outstanding checks at the beginning and end of the period;
  - Outstanding deposits at the beginning and end of the period;
  - Annual total receipts and disbursements;
  - Note: Such totals will enable you to conduct a proof of cash for virtually any period, i.e. annual, monthly, multi-year, partial year, etc.

## Procedure to Complete the Proof of Cash

The following procedures describe how to perform a proof of cash for an annual period from January 1 through December 31, 2004.

1. Starting Point “**Begin 12/31/03 (December 31, 2003)**” – Beginning of the period under analysis.

These steps pertain to the “Balance per Bank.”

- a. *Line 1:* Enter the “balance per the bank” on the last day (i.e., December 31, 2003) of the statement (previous year-end), shown as \$184,256 on the example.

- b. *Line 2a* Add any deposits not received and recorded by the bank at that date, shown as \$639,240.
- c. *Line 3:* Subtract any outstanding checks per books and bank at same date, shown as (\$826,589).
- d. *Line 4:* Is comprised of the total of lines 1, 2a and 3a, shown as (\$3,093) indicating an overdraft situation.

These steps pertain to the "Balance per (Marital Estate) Books."

- e. *Line 5:* Enter cash balance per the marital estate's books as of December 31, 2003, shown as (\$3,093).
- f. *Line 6, 7, 8 and 9:* Should not require entries unless any items were not posted to the marital estate's records *at the end* of the previous fiscal year.)
- g. *Line 10:* Is comprised of the total of lines 5 through 9 and should be the same as line 4.

2. Next Step "**Received 2004**" – Recording receipts for the year.

These steps pertain to the "Balance per Bank."

- a. *Line 1:* Enter the total deposits for 2004 *according to the bank* statements, shown as \$676,073,010 on the example. Note: Reconciling items shown on the example include (\$22,910,848), (\$3,155,662) and (\$591,928,329) which are identified as Transfers to Sweep Account, Transfers to Master Account and Sweep Debits, respectively; all identified on the bank statements.
- b. *Line 2a:* Subtract any deposits recorded by the bank belonging to 2003 (same as Line 2a, Step 1, shown as (\$639,240)).
- c. *Line 2b:* Add any deposits in transit not received and recorded by the bank as of December 31, 2004, shown as \$21,114 (same as Line 2b, December 31, 2004).
- d. *Line 4:* Is comprised of the totals of Lines 1 through 2b. See "Note" on Step 2a, above.

These steps pertain to the "Balance per (Marital Estate) Books."

- e. *Line 5:* Enter the total receipts for 2004 according to the marital estate books, shown as \$675,015,076. Note: Reconciling items shown on the example include (\$614,829,975) and (\$3,155,662) which are identified as Transfers to Sweep Account and Transfers to Master Account, respectively; all identified on the bank statements.
- f. *Line 8:* Add (or subtract) any known differences between the marital estate books and the bank, shown as \$11,254.

- g. *Line 9:* Add (or subtract) any interest received (or charged) from the bank and not recorded in books, shown as (\$2,396).
  - h. *Line 10:* Is comprised of the total of Lines 5 through 9, shown as \$57,038,297. This should balance with Line 4 Column 2, shown as \$57,460,046.
  - i. Note that the difference, shown as \$421,749 results after identifying any/all reconciling items.
3. Next Step “**Disbursed 2004**” – Recording disbursements for the year.

These steps pertain to the “Balance per Bank.”

- a. *Line 1:* Enter the total disbursements and charges for 2004 *according to the bank* statements, shown as \$676,106,648. Note: Reconciling items shown on the example include \$10,771,464, \$19,269,718, \$596,668,006, and \$2,487,765 which are identified as Transfers from Sweep Account, Transfers from Master Account Sweep Credits, and Transfers to XXX Ltd., respectively. Each of the preceding items was identified on the bank statements except for the XXX Ltd. item which was discovered during completion of the Proof of Cash.
- b. *Line 3a:* Subtract any charges/outstanding checks recorded by the bank in 2004, but actually belonging to 2003, shown as \$826,589, which should be the same amount as column 1).
- c. *Line 3b:* Add any outstanding checks not cleared by the bank at December 31, 2004, shown as (\$79,726).
- d. *Line 4:* Is comprised of the totals of Lines 1 through 3b, shown as (\$46,162,832).

These steps pertain to the “Balance per (Marital Estate) Books.”

- e. *Line 5:* Enter total disbursements for 2004 according to the marital estate books, shown as (\$675,497,228). Note: Reconciling items shown on the example include \$607,432,665, \$19,269,718, and \$2,487,765 which are identified as Transfers from Sweep Account, Transfers from Master Account Sweep Credits, and Transfers to XXX Ltd., respectively. Each of the preceding items was identified on the bank statements except for the XXX Ltd. item which was discovered during completion of the Proof of Cash. Note also the “other” items comprising (\$7,164) and the “surprise” transfer of \$565,543.
- f. *Line 6:* Add any bank service charges not recorded on the marital estate books, shown as \$0.
- g. *Line 7:* Subtract any NSF checks returned by the bank, but not entered on the marital estate books, shown as \$0.
- h. *Line 8:* Add or subtract any other known differences between the marital estate books and the bank, shown as (\$7,164).

- i. *Line 10:* Is comprised of the totals of Lines 5 through 8, etc. This should balance with Line 4 Col 3. However, in the example the total of \$45,748,700 differs from the \$46,162,832 amount, thus indicating an unaccounted for difference of (\$414,131).
4. Ending Point “**End 12/31/04 (December 31, 2004)**” – Ending of the period under analysis.

These steps pertain to the “Balance per Bank.”

- a. *Line 1:* Enter the *balance per the bank* as of December 31, 2004 (the last bank statement date), shown as \$150,618.
- b. *Line 2b:* Add any deposits in transit on December 31, the end of the current year (2004), shown as \$21,114, the same amount shown on Line 2b, “Received 2004.”
- c. *Line 3b:* Subtract the total outstanding checks at December 31, 2004, shown as \$79,726, the same amount shown on Line 3b, “Disbursed 2004.”
- d. *Line 4:* Is comprised of the totals of Lines 1 through 3b, shown as \$92,006.

These steps pertain to the “Balance per Marital Estate Books.”

- e. *Line 5:* Enter the cash balance per the marital estate books at end of 2004, shown as \$84,388.
  - f. *Line 6:* Subtract the bank service charge, if not posted to marital estate books, shown as \$0.
  - g. *Line 7:* Subtract any NSF checks returned but not posted, shown as \$0.
  - h. *Line 8:* Add or subtract any other known differences between the marital estate books and the bank, shown as \$7,618.
  - i. *Line 9:* Add any interest received from the bank not posted to the marital estate books, shown as \$0.
  - j. *Line 10:* Is comprised of the totals of Lines 5 through 9, shown as \$92,006. This should balance with Line 4 “End December 31, 2004.”
5. To reconcile any outstanding differences and thus identify unreported deposits, withdrawals or income apply the following procedures.
- a. Line 10 of “End December 31, 2004,” shown as \$92,006 should balance with the marital estate’s adjusted cash on hand.
  - b. The following steps, after accounting for any differences should balance:

- i) Begin with amount on Line 10 of "Begin December 31, 2003," shown as (\$3,093),
  - ii) Add the amount on Line 10 of "Received 2004," shown as \$57,038,297,
  - iii) Subtract the amount on Line 10 of "Disbursed 2004," shown as \$45,748,700.
- c. After preparing the proof of cash using the known amounts, the reconciling differences can be individually identified and placed in the proper location in the schedule in order to identify errors and misreporting. Typical unaccounted for items include:
  - i) Incorrect totals and/or subtotals in the marital estate's books;
  - ii) Transfers to/from other accounts were overlooked;
  - iii) Voided and/or cancelled checks may have been purposely used;
  - iv) NSF checks were not properly reversed from the marital estate books;
  - v) Discrepancies between receipt, disbursement or transfer amounts between the bank and the marital estate books;
  - vi) Inconsistent transaction dates, e.g. holding open cutoff dates;
  - vii) Bank charges not posted to the marital estate books;
  - viii) Bank interest not recorded on the marital estate books.
- 6. The "Proof" column is a control total column.
- 7. The "Difference" column is also a control total column that can be used throughout the preparation of the schedule in order to maintain a running total of differences.\
- 8. Finally, note the two final lines titled, "Difference" and "Transfers to/from Affiliate" which highlight the unaccounted for (previously undisclosed) amounts that result from the forensic accountant's analysis.
  - a. Line 10 of "End December 31, 2004," shown as \$92,006 should balance with the marital estate's adjusted cash on hand.

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**EXAMPLE TARGET COMPANY**

**Proof of Cash**

**Bank of America Account No. XXXXXX-XXXX**

	Line	Begin 12/31/03	Received 2004	Disbursed 2004	End 12/31/04	Proof	Difference
<b>Balance per Bank:</b>	1	\$ 184,256	\$ 676,073,010	\$ (676,106,648)	\$ 150,618	\$ 143,000	\$ 7,618
Less Transfers to/from Sweep Account #4XXXXXXXXXXXX			(22,910,848)	10,771,464			-
Less Transfers to/from Master XXXXXXXXXXXXXXX			(3,155,662)	19,269,718			-
Less "Sweep credits or debits" per statement			(591,928,329)	596,668,006			-
Less Transfers to/from XXX Ltd. XXXXXXXXXXXXXXX			-	2,487,765			-
Deposits in transit:			-				-
Begin (computed, do not have actual)	2a	639,240	(639,240)				-
End	2b		21,114	-	21,114	21,114	-
Outstanding Checks:			-				-
Begin (computed, do not have actual)	3a	(826,589)		826,589			-
End	3b			(79,726)	(79,726)	(79,726)	0
ADJUSTED BALANCE	4	\$ (3,093)	\$ 57,460,046	\$ (46,162,832)	\$ 92,006	\$ 84,388	\$ 7,618
<b>Balance per Books:</b>	5	\$ (3,093)	\$ 675,015,076	\$ (675,497,228)	\$ 84,388	\$ 84,388	\$ -
Less Transfers to/from Sweep Account			(614,829,975)	607,432,665			-
Less Transfers to/from Master XXXXXXXXXXXXXXX			(3,155,662)	19,269,718			-
Less Transfers to/from XXX Ltd. XXXXXXXXXXXXXXX			-	2,487,765			-
Service charge:	6		-	-			-
NSF Checks returned:	7		-	-			-
Bank transfers, errors in recording, other adjustmen	8		11,254	(7,164)	7,618		7,618
"SURPRISE"			-	565,543			-
Interest posted, by bank:	9		(2,396)	-			-
ADJUSTED BALANCE	10	\$ (3,093)	\$ 57,038,297	\$ (45,748,700)	\$ 92,006	\$ 84,388	\$ 7,618
(same as line 4)							0
Difference		0.01	\$ 421,749	\$ (414,131)	\$ 7,618	\$ (0)	\$ 7,618
<b>Transfers to/from AFFILIATE</b>			\$ 67,495	\$ 9,809,541			

**Notes**

- February beginning balance per reconciliation does not tie to ending balance prior month. Difference \$4,090.05
- Missing page 5 of the March 2004 BoA XXXXXXXXXXXXXXXXXXXX statement.
- Beginning in May, 2004 sweep credits and debits appear on the checking account and format of bank statements changed.
- Credit of \$7,164 per bank on 5/10/05 & debit of \$7,164 on 5/6/05 not shown in XXX disbursements. Transactions wash.
- Beginning in June transactions in and out of funds sweep account no longer appear on checking account statements.
- A sweep debit of \$2,936,986.86 appears as a sweep credit on July 1 - technically a sweep in transit but not tracked that way by XXX on bank reconciliations.
- Do not have the Dec. checking account statement. Pages from internet show debits and credits. Balance column not readable.

**Account Description**

Bank of America Account No. XXXXXX-XXXX  
 NEW BANK Checking  
 Bank of America FundSweep Statements (Account No. XXXXXXXXXXXXXXX)  
 Bank of America Master Settlement Account No. XXXXX-XXXX



## FINANCIAL STATEMENT ANALYSIS (BASIC)

### Financial Statements Defined

Forensic accountants often investigate marital estates through analysis of the marital estate's financial statements, or those documents that are "referred to" as financial statements by the spouse(s). In practice the degree of representation of the marital estate financial statements, and thus the reliance by the forensic accountant varies widely.

For purposes of this article, the following generally accepted accounting definitions are offered for reference:

- ❑ *Financial statement* – Any report summarizing the financial condition or financial results of a person or organization on any date or for any period. Financial statements include the balance sheet and the income statement and sometimes the statement of changes in financial position.<sup>9</sup>
- ❑ *Consolidated statement* – Financial statements that include the accounts of both a parent company and controlled subsidiaries.<sup>10</sup>
- ❑ *Balance sheet* – The balance sheet, sometimes called the statement of financial position, lists the company's assets, liabilities and stockholders' equity (including dollar amounts) as of a specific moment in time.<sup>11</sup>
  - *Assets* - Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.<sup>12</sup>
  - *Liabilities* - Liabilities are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.<sup>13</sup>
  - *Equity* - Equity or net assets is the residual interest in the assets of an entity that remains after deducting its liabilities.<sup>14</sup>
- ❑ *Income statement* – The income statement, sometimes called an earnings statement, reports the profitability of a business organization for a stated period of time. In accounting, we measure profitability for a period, such as a month or a year,

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<sup>9</sup> Black's Law Dictionary 6<sup>th</sup>, West Publishing Co., (St. Paul, MN – 1990), page 631.

<sup>10</sup> Ibid, page 631.

<sup>11</sup> Hermanson, Roger H., and Edwards, James Don, Financial Accounting – A Business Perspective 7<sup>th</sup>, Irwin/McGraw-Hill, (Boston, MA – 1998), page20.

<sup>12</sup> *Concept Statement No. 6*, "Elements of Financial Statements", FASB (Financial Accounting Standards Board), (Norwalk, CN – 1985).

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

by comparing the revenues generated with the expenses (and costs) incurred to produce these revenues.<sup>15</sup>

- *Revenues* - Revenues are inflows or other enhancements of assets of an entity or settlements of its liabilities (or a combination of both) from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations.<sup>16</sup>
  - *Expenses* - Expenses are outflows or other using up of assets or incurrences of liabilities (or a combination of both) from delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations.<sup>17</sup>
- *Cash flow statement* – The cash flow statement shows the cash inflows and cash outflows from operating, investing and financing activities.<sup>18</sup>
- *Operating flows* - Operating activities include all transactions and other events that are not defined as investing or financing activities. Operating activities generally involve producing and delivering goods and providing services. Cash flows from operating activities are generally the cash effects of transactions and other events that enter into the determination of net income.<sup>19</sup>
  - *Investing flows* -Investing activities include making and collecting loans and acquiring and disposing of debt or equity instruments and property, plant, and equipment and other productive assets, that is, assets held for or used in the production of goods or services by the enterprise (other than materials that are part of the enterprise's inventory).<sup>20</sup>
  - *Financing flows* - Financing activities include obtaining resources from owners and providing them with a return on, and a return of, their investment; borrowing money and repaying amounts borrowed, or otherwise settling the obligation; and obtaining and paying for other resources obtained from creditors on long-term credit.<sup>21</sup>

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<sup>15</sup> Hermanson, et al, page 18.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

<sup>18</sup> Hermanson, et al, page 20.

<sup>19</sup> FAS 95: *Statement of Cash Flows*, FASB (Financial Accounting Standards Board), (Norwalk, CN – 1987).

<sup>20</sup> Ibid.

<sup>21</sup> FAS 95: *Statement of Cash Flows*, FASB (Financial Accounting Standards Board), (Norwalk, CN – 1987).

### **Generic Financial Statement Analysis<sup>22</sup>**

Note that the following items represent only a tiny fraction of the possible types of financial analysis available to a forensic accountant. Very generally, the methods consist of detailed scrutiny of transactions from the financial statements through the source document(s). The method begins with a top-down approach so that the overall financial statements are progressively analyzed according to the following categories:

- ❑ *Horizontal Analysis* – This test consists of comparing key account categories, such as officer compensation, travel and entertainment, etc. over a multi-period (e.g., year, quarter, month, day) time horizon to identify changes meriting further investigation. The test typically includes percentage changes, dollar changes, comparison changes, etc.
- ❑ *Vertical Analysis* – This test consists of comparing the relative size of accounts within financial statements over a multi-period time horizon. The test typically includes percentage changes, dollar changes, comparison changes, etc. and is further applied to Trending, Ratio and Common-Sizing tests.
- ❑ *Trending Analysis* – This test consists of comparing the rate of growth of items in comparison to the other financial items. The typical method consists of determining the compound annual growth rate (CAGR) within and among the various account items. For example, if revenues exhibit a 10% CAGR, and cost of goods sold exhibit a 30% CAGR, further investigation is necessary.
- ❑ *Ratio Analysis* – This test consists of measuring the articulation of the financial statements among various categories including liquidity, profitability, turnover, leverage, etc. to identify areas meriting further investigation. Also, this method provides the basis for comparison to similar businesses to identify variances. For example, if utility expenses for similar business are 7% and the subject entity exhibits 24%, further investigation is necessary.
- ❑ *Common-Sizing* – This test consists of converting all financial statement items to a percentage of revenue and assets. This method also accommodates a comparison to similar businesses that may be a much different size.
- ❑ *Visual Testing* – This method consists of visually examining relationships within and among the financial statements, and typically includes elements of all the preceding tests. An advantage of this test is the demonstration of findings to parties lacking technical knowledge of the preceding tests.

### **Varying Measurement Baselines**

Consequently, financial statements and related transactional documents requiring investigation span a continuum ranging from “shoebox” data to audited financial

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<sup>22</sup> For a more detailed approach to financial statement analysis refer to *Using Ratio Analysis: A Case Study*, *National Litigation Consultants’ Review*, (Litigation Consultants, LLC – Vol. 3 Issue 7, December 2003), co-authored with Gregory A. Gadawski.

statements. Definable points along the continuum are outlined below, phrased within the context of a marital business entity.

- **“Shoebox data”** – Even mid-sized business owners sometimes rely on a primary, or a few key measurements (as they perceive them) to “manage” the business. The authors have encountered a wide variety of individualized practices.

For example, a rice farmer dutifully collected any and all “business” documents in a small cardboard box throughout the year. They could range from feed store cash register receipts to personal bank statements indicating deposits. The first week of each January he delivered the cardboard box and its contents (still unorganized) to his CPA. Interestingly, in the bottom of the box the rice farmer kept an old pair of dice and an old horseshoe, “...*just for luck.*”

- **“Checkbook management”** – Many small business owners rely on a primary, or a few key measurements (as they perceive them) to “manage” the business. The authors have encountered a wide variety of individualized practices.

For example, a small specialty chemical manufacturer gauged the profitability of his business by his checkbook balance. When his business checking account carried a balance exceeding \$1,000,000 he reasoned that his business was doing “OK.” Otherwise, he would spur his salesmen into action. Another business owner “netted” the respective balances of accounts receivable against accounts payable every week. He was confident of success unless any week’s “net” fell below his arbitrary “cushion” he periodically established.

- **“Income tax return management”** – Even mid-sized business owners rely on annual income tax returns as their primary business management tool. This can result in “guesstimate” methods particularly for important balance sheet items such as inventories, accounts receivable and allowances, gross profit margins, etc.

- Tax basis accounting – Tax basis accounting may or may not be based upon Generally Accepted Accounting Principles (“GAAP”), but is typically cost-driven or fair market value-driven depending upon the respective facts and circumstances. Further, timing differences, e.g. depreciation, revenue recognition, and inventory methods can affect tax basis accounting.

- **OCBOA – Other Comprehensive Basis of Accounting** – This category, under SAS No. 62 (Statement on Accounting Standards) Special Reports, can be any one of:

- A statutory basis of accounting (for example, a basis of accounting insurance companies use under the rules of a state insurance commission);
- Income-tax-basis financial statements;

- Financial statements prepared using definitive criteria having substantial support in accounting literature that the preparer applies to all material items appearing in the statements (such as the price level basis of accounting).
- **Measurement “Gaps”** – Even mid-sized businesses ignore the importance of regular, i.e. monthly financial statements to track and control operating performance. Consequently, analysis is often dependent upon irregular annual measurements which preclude a finer calibration of trends and patterns.

For example, although annual financial analysis, e.g. common-sizing, trending, horizontal/vertical, ratio, growth rate and similar techniques are helpful, more frequent measurements can be more specific. Note the annual “resting” requirements of lending institutions. The “resting” requirement lines of credit (LOC) demonstrate the business’ solvency and limit the lending institution’s risk.

### **“Cooking” the Books**

Common methods of “cooking the books” in a business (depending upon intentions to over or understate results) are overstating/understating revenues, overstating/understating expenses, and balance sheet manipulation. Typically overstatement of revenues and overstatement of expenses will occur concurrently so the culprit can avoid award on misreported funds.

Balance sheet manipulation can be as simplistic as merely adjusting balance sheet accounts to account for stolen funds (i.e. increasing/decreasing the cash account and increasing/decreasing the equity account). However, balance sheet manipulation schemes can easily be detected since the change in equity will not agree with the net income or net loss reported on the income statement.

### **The Cash Flow Statement**

A powerful, yet underutilized forensic accounting technique is based upon use of the Cash Flow Statement. The data available from a Cash Flow Statement represents the “Holy Grail” of forensic accounting techniques. That is because the Cash Flow Statement is the most difficult to directly manipulate. However, the Cash Flow Statement is still not well understood for its forensic applications.

A quick history lesson explains why. The balance sheet and income statement are based upon the double-entry method of accounting. The double-entry technique was formalized by Luca Pacioli, a Franciscan monk who published in 1494 his *Summa de arithmetica, geometria, proportioni et proportionalita* (The Collected Knowledge of Arithmetic, Geometry, Proportion and Proportionality). Pacioli wrote the *Summa* in an attempt to redress the poor state of mathematics teaching in his time. One section in the book made Pacioli famous, the *Particularis de Computis et Scripturis* (Of Reckonings and Writings), a treatise on accounting.

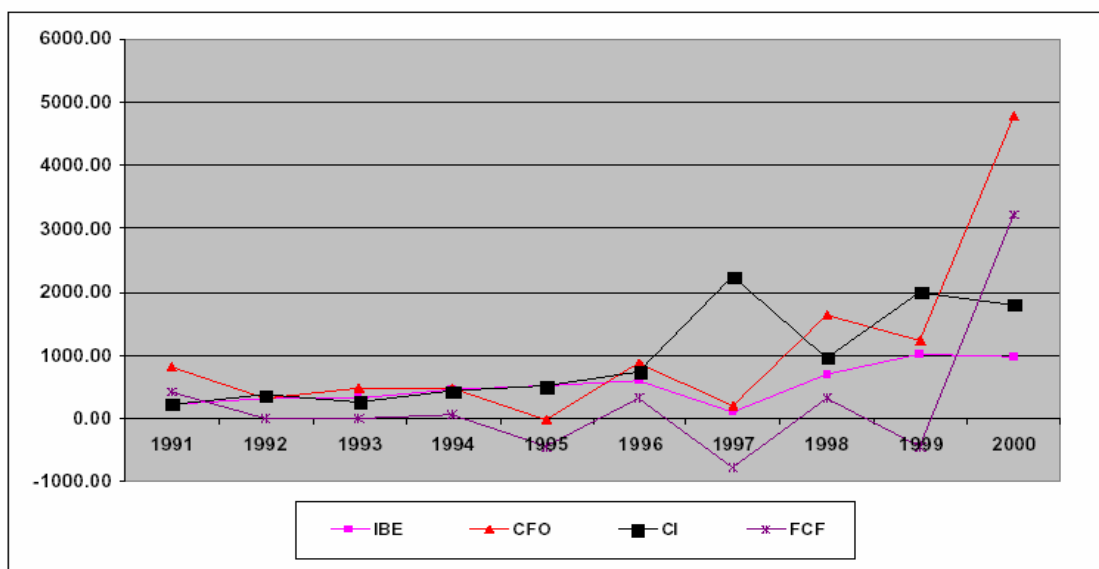
Consequently, the balance sheet and income statement have more than 500 years of familiarity. Conversely, the Statement of Cash Flow (*Statement of Financial Accounting Standards No. 95*, November 1987) has been in force less than 20 years. Therefore, it is still embryonic in its application.

Marital estates that provide financial statements, or for which financial statements have been prepared by the forensic accountant exhibit certain key characteristics. Consequently, such characteristics can be investigated using basic financial statement analysis tools.

Note that since most closely held businesses do not provide a Statement of Cash Flows (unless audited or reviewed financials are provided) the forensic accountant must prepare the statement.

A comparison of Operating Cash Flow should be made to *reported* Net Income. Logically, Operating Cash Flow should lag reported Net Income due to the accrual nature of GAAP. Manipulated financial statements will exhibit Operating Cash Flow that trends differently from reported Net Income.

A stronger grasp of the Cash Flow Statement's capabilities may have alerted investors to financial statement misrepresentation in several well known corporate failures. Note the following cash flow graph<sup>23</sup> that illustrates Enron's key cash flows. The "aberration" in 1997 provided an early warning that the financial records were disconnected internally.



- **IBE** - Income before extraordinary items and discontinued operations.
- **CFO** - Cash flow from operations.

<sup>23</sup> Catanach, Anthony H., Jr., and Rhoades-Catanach, Shelley, "Enron: A Financial Reporting Failure?" Villanova Law/Public Policy Research Paper No. 2003-14, [Villanova Law Review, Vol. 48, No. 4, p. 1057, 2003.](#)



- **CI** - Comprehensive income defined as the change in owners' equity plus dividends net of capital contributions.
- **FCF** - Free cash flow is measured by cash flow from operations (CFO) minus net capital expenditures plus net interest payments.

### **Sustainable Growth Rate (SGR)**

A sustainable growth rate compares a claimed rate of business growth to its realistic growth rate. It is calculated base upon reported Net Income which is compared to actual growth. In manipulated financial statements the actual growth rate will exceed the sustainable rate since illegitimate funds are flowing through (or not entering) the operation.

Estimation of the sustainable growth rate can be achieved by applying the sustainable-growth model.<sup>24</sup> This model relies on two basic accounting concepts: return on equity and the plow-back ratio. The equation follows:

$$Gs = Bs \times ROE$$

Gs = sustainable growth rate for a company,

Bs= plow-back ratio calculated as follows:

$$\frac{\text{Annual Earnings} - \text{Annual Dividends}}{\text{Annual Earnings}}$$

ROE = return on book equity as follows:

$$\frac{\text{Annual Earnings}}{\text{Book Value of Equity}}$$

Use of independent parallel indicators can identify reporting anomalies. For example, in charitable organizations the development department (or equivalent) typically maintains a donor log independent of management. Comparison of the log's entries to the reported donations can identify inconsistencies that require additional investigation. Similar comparisons can be conducted for nearly all businesses, e.g. Styrofoam cup usage compared to coffee receipts, etc.

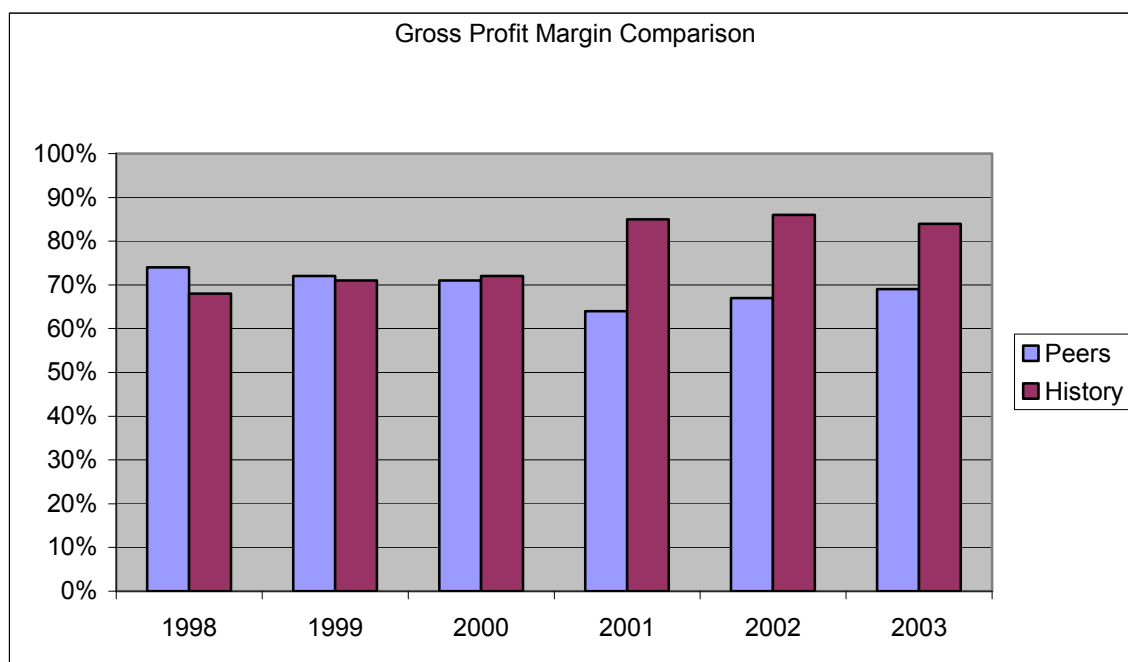
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<sup>24</sup> ("Stocks, Bonds, Bills and Inflation, Valuation Edition" – 2002 Yearbook, Ibbotson Associates, Chicago, IL – 2002, page 62.).

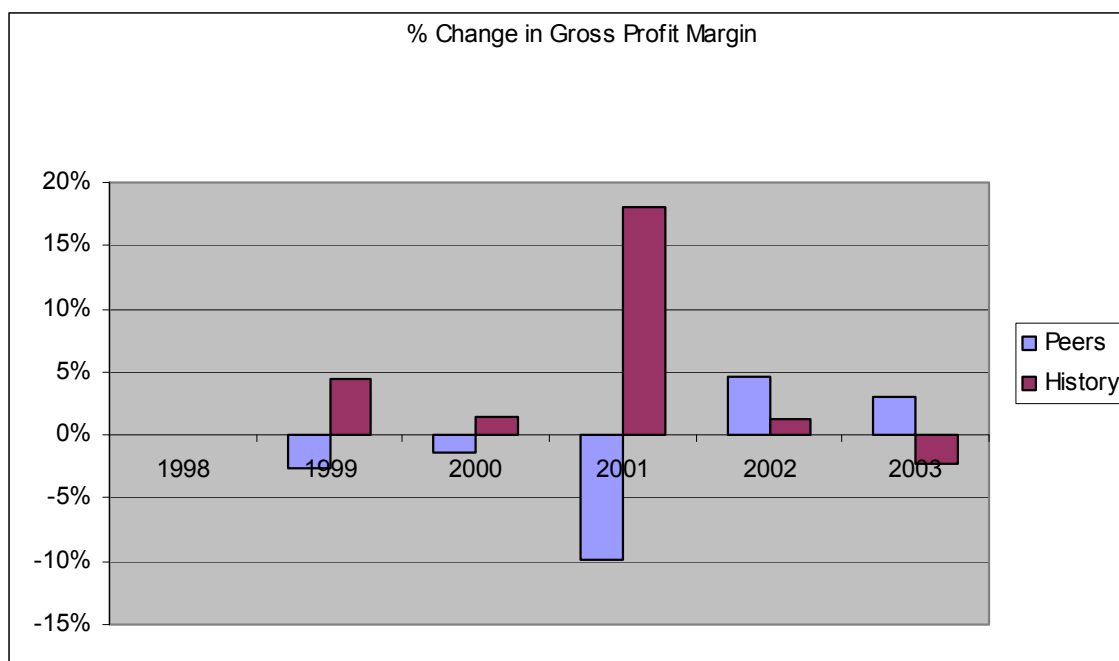
### Gross Profit Margin Test - “Too Much”

A primary analytical tool that highlights illicit deposits is known as the gross profit margin comparison test. The gross profit margin comparison test calculates the gross profit margin of the respective business and compares it to two key benchmarks: its peer group and itself over time. If anomalies are identified then further investigation can be initiated. The following graphs illustrate the annual gross profit margin for a hypothetical closely-held bakery.

The first graph measures a hypothetical closely-held bakery's gross profit margin expressed as a percentage  $((\text{sales} - \text{cost of goods sold} = \text{gross profit})/\text{sales})$  against its peer group and itself (history) for the years 1998 through 2003. The graph demonstrates that the bakery's gross profit margin exceeds the industry's gross profit margin, and likewise increased in recent years. The peer group data can be obtained from various sources, e.g. RMA or can be constructed on an ad hoc basis to serve as a benchmark.



The exhibit below illustrates a more dramatic comparison resulting from applying the percentage change on a year-to-year basis. The exhibit measures each individual year's increase or decline in gross margin as a percentage change  $((2003 \text{ gross profit margin} - 2002 \text{ gross profit margin})/2002 \text{ gross profit margin})$ .

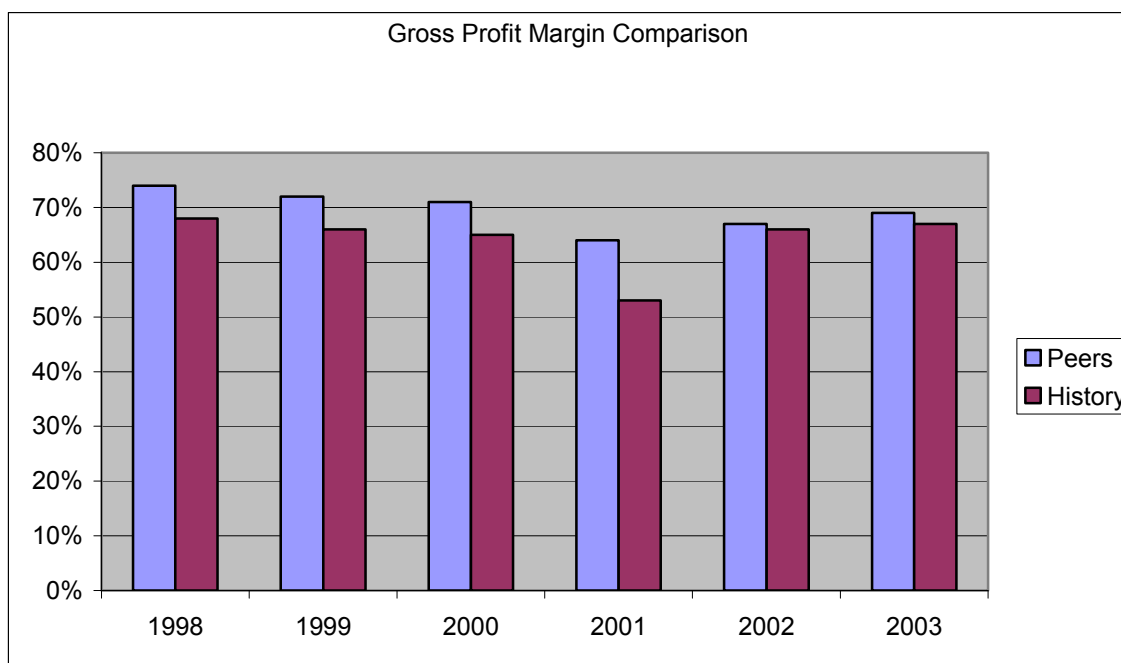


The percentage change in gross profit margin analysis contained in the exhibit above illustrates the significant change in gross profit margin coincident with and following key events in 2001, e.g. perhaps a disruption to local traffic flow.

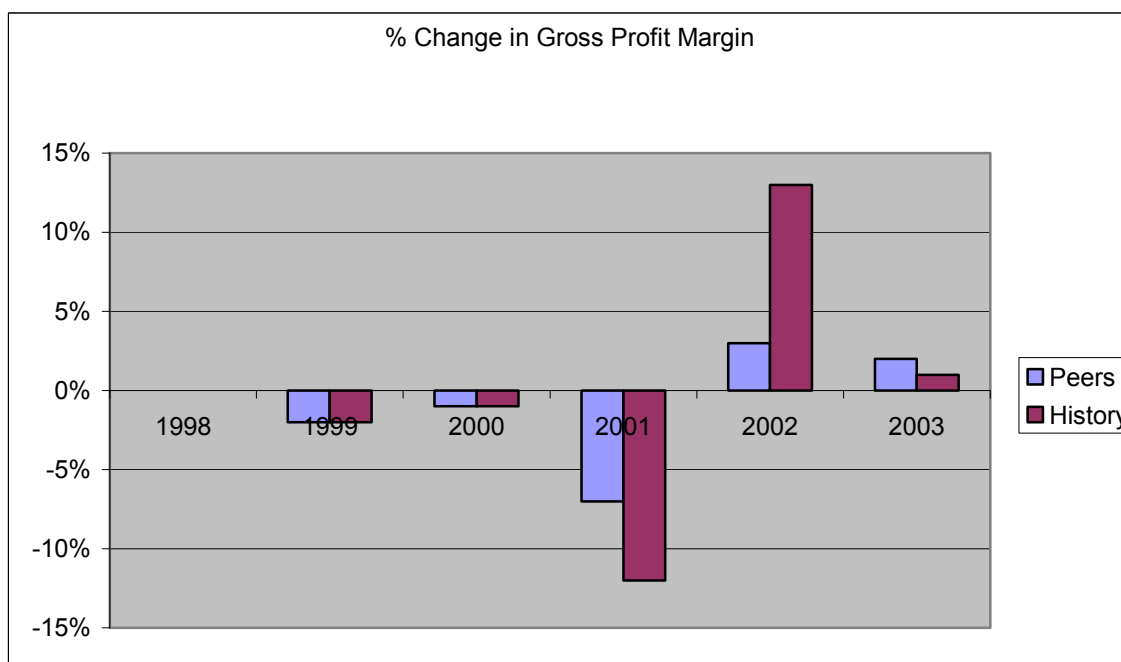
The gross profit margin comparison test is based upon laundered monies flowing through a business to the owners of the business who, then presumably direct the funds to their respective concealed sources. The same test is used to determine when the business may have been used to direct the funds to concealed sources, say when bogus payments are made to so-called vendors who are paid for merchandise such as flour never delivered to the bakery.

#### **Gross Profit Margin Test - “Too Little”**

The next exhibit, below measures a different closely-held bakery’s gross profit margin expressed as a percentage ((sales - cost of goods sold = gross profit)/sales) against its peer group and itself (history) for the years 1998 through 2003. In this scenario the exhibit demonstrates that the bakery’s gross profit margin falls below the industry’s gross profit margin, and likewise decreased in recent years. Note that this test is a classic test conducted by the IRS (Internal Revenue Service) and can indicate skimmed and/or unreported receipts.



The next exhibit, below illustrates a more dramatic comparison resulting from applying the percentage change on a year-to-year basis. The exhibit measures each individual year's increase or decline in gross margin as a percentage change ((2003 gross profit margin – 2002 gross profit margin)/2002 gross profit margin).



As indicated by the preceding schedules even simple tests such as the gross profit margin analysis comparison can identify and illustrate symptomatic indicators of money laundering for forensic accounting purposes.

### **DIGITAL ANALYSIS**

The concept of “digital analysis” became practical when computers became commonplace. Generally, digital analysis uses computer power to test for digit patterns according to the following tests.

The following forensic accounting methods are often performed simultaneously depending upon the software utilized. Many forensic accountants use “IDEA” Data Analysis Software a powerful analytical tool that can import a wide variety of data types. The vendor, Audimation Services, Inc. provides demo versions and can be located at [www.audimation.com](http://www.audimation.com). Audimation Services, Inc.’s tag line succinctly describes its software: *"Looks like a spreadsheet - works like a database, IDEA is Excel® on steroids!"*

### **Gap Analysis**

A “gap analysis” analyzes all the check numbers used by a marital estate over the time horizon under investigation and identifies missing check numbers, i.e. “gaps” in the number sequence. Theoretically, the missing check numbers reflect *void* checks. However, they should be individually traced to determine that they were not misappropriated. The results can be compared to the “proof of cash” technique described above.

In the following example, an analysis of the missing checks revealed that some of the supposedly voided checks were written to a fictitious consulting company. Other checks have yet to be located. All cancelled, voided and unused checks should be accounted for to verify their existence and use as recorded in the books and records.

Check Number Gaps		Number Missing	Missing Check	Have Void Copy	Analysis of Located Checks		
Beginning	Ending				Payee	Amount	Date Cleared
7233	7233	1	7233	y			
7314	7315	2	7314		Fictitious Consulting Co.	\$4,250.00	10/19/00
			7315	y			
7407	7408	2	7407	y			
			7408	y			
7543	7544	2	7543	y			
			7544	y			
7653	7654	2	7653		Fictitious Consulting Co.	\$4,970.00	11/07/00
			7654	y			
7777	7778	2	7777		Fictitious Consulting Co.	\$8,760.00	11/20/00
			7778	y			
7867	7868	2	7867		Fictitious Consulting Co.	\$8,970.00	11/27/00
			7868	y			
11321	11331	11	11321		Fictitious Consulting Co.	\$37,892.00	02/08/05
			11322		Fictitious Consulting Co.	\$36,756.20	03/24/05
			11323	n			
			11324	n			
			11325	n			
			11326	n			
			11327	n			
			11328		Fictitious Consulting Co.	\$34,694.00	03/29/05
			11329	n			
			11330	n			
			11331	n			
11341	11342	2	11341		Fictitious Consulting Co.	\$28,992.00	09/26/01
			11342	n			

### Duplicate Numbers Test

The “duplicate number” test is used to identify abnormal recurrences of specific numbers, e.g. check numbers, check amounts, etc. The objective is to draw attention to small groups of numbers that appear to be unusual due to their recurrence. The technique analyzes all the check (and/or other) numbers used by a marital estate over the time horizon under investigation and determines whether duplicate numbers exist. If duplicates are found they must be individually investigated to determine disposition. A pattern of irregular withdrawal or deposit activity may result in the discovery of additional assets or revenue sources.

The forensic analysis should include a review of all significant duplicative transactions as well as those that are material in aggregate. For example, in the following analysis there are 111 transactions for \$301.50. Further investigation revealed that these were ATM withdrawals of \$300.00 plus \$1.50 transaction fees. Conversely, there were only 30 transactions in the amount of \$3,500.00. However, the aggregate value of these transactions was \$105,000.00 thereby prompting further investigation.

American Journal of Family Law  
*Is The Moneyed Spouse Lying About The Money?©*

Darrell D. Dorrell

Amount	# of Records	Total Amount	% of Records	% of Debits
10.00	469	4,690.00	2.21%	0.00%
15.00	144	2,160.00	0.68%	0.00%
18.50	129	2,386.50	0.61%	0.00%
20.00	201	4,020.00	0.95%	0.00%
25.00	651	16,275.00	3.07%	0.01%
100.00	204	20,400.00	0.96%	0.01%
150.00	41	6,150.00	0.19%	0.00%
200.00	91	18,200.00	0.43%	0.01%
250.00	38	9,500.00	0.18%	0.01%
300.00	208	62,400.00	0.98%	0.04%
301.50	111	33,466.50	0.52%	0.02%
400.00	34	13,600.00	0.16%	0.01%
450.00	22	9,900.00	0.10%	0.01%
500.00	91	45,500.00	0.43%	0.03%
550.00	16	8,800.00	0.08%	0.01%
600.00	34	20,400.00	0.16%	0.01%
650.00	10	6,500.00	0.05%	0.00%
700.00	23	16,100.00	0.11%	0.01%
750.00	38	28,500.00	0.18%	0.02%
800.00	26	20,800.00	0.12%	0.01%
900.00	14	12,600.00	0.07%	0.01%
950.00	10	9,500.00	0.05%	0.01%
1,000.00	117	117,000.00	0.55%	0.07%
1,100.00	26	28,600.00	0.12%	0.02%
1,200.00	18	21,600.00	0.08%	0.01%
1,300.00	14	18,200.00	0.07%	0.01%
1,400.00	13	18,200.00	0.06%	0.01%
1,500.00	71	106,500.00	0.33%	0.07%
2,000.00	174	348,000.00	0.82%	0.22%
2,500.00	82	205,000.00	0.39%	0.13%
2,700.00	17	45,900.00	0.08%	0.03%
3,000.00	130	390,000.00	0.61%	0.25%
3,400.00	16	54,400.00	0.08%	0.03%
3,500.00	30	105,000.00	0.14%	0.07%
4,000.00	48	192,000.00	0.23%	0.12%
4,500.00	17	76,500.00	0.08%	0.05%
5,000.00	253	1,265,000.00	1.19%	0.80%

### Rounded Numbers Test

The “rounded number” test operates on the same premises as the “duplicate number test, above. However, the objective is to identify abnormal recurrences of *rounded* numbers. Abnormal recurrences of rounded numbers are good indicia of estimation since people tend to estimate when they create contrived numbers. See also, “Benford’s Law, below.

The technique analyzes all the check amounts used by a marital estate over the time horizon under investigation and identifies the extent and proportion of rounded numbers. Those check amounts exhibiting rounded numbers must be individually investigated to determine disposition. The following example illustrates a rounded numbers test.



	Number of Records	Aggregate Withdrawals	Actual Proportion	Expected Proportion	Direction	Z-Statistic
10s	6,287	\$ 108,667,550	0.25971	0.1	over	82.8198
25s	5,533	\$ 106,764,875	0.22856	0.04	over	149.698
100s	4,054	\$ 104,427,800	0.16747	0.01	over	246.2083
1000s	2,369	\$ 97,216,000	0.09786	0.001	over	476.7037

### Stratification Percentage Comparison

A *stratification percentage comparison* test categorizes check amounts into predefined strata, e.g. high, medium, low or perhaps “Above \$10,000,” “Between \$5,000 and \$9,999,” etc. The stratification serves several purposes including:

- ❑ **The Pareto Principle or the 80:20 Rule** - In the late 1800s, economist and avid gardener Vilfredo Pareto established that 80% of the land in Italy was owned by 20% of the population. While gardening he later observed that 20% of the peapods in his garden yielded 80% of the peas that were harvested. And thus was born a theory that has stood the test of time and scrutiny. In the late 1800s, M. O. Lorenz and Vilfredo Pareto studied distribution theory and found that a large percentage of crime was committed by a small percentage of the total population. The same principle can be applied to fraudulent recordkeeping.

### BENFORD’S LAW

Benford’s Law is the *DNA-equivalent technique* for forensic analysis of financial (and non-financial) datasets. Benford’s Law is an analytical technique identified in the late 1800s by the astronomer/mathematician Simon Newcomb.<sup>25</sup> Newcomb noted that the upper right-hand corners of the first few pages of logarithm table books were more worn than the later pages. In those pre-calculator days, logarithm table books were used to accelerate the process of multiplying 2 large numbers by summing the log of each number and then referring to the table for the requisite integer.

He concluded that numbers beginning with 1 occur more frequently than numbers beginning with 2, numbers beginning with 2 occur more frequently than numbers beginning with 3, etc. Newcomb published an empirical result based on his observations in the American Journal of Mathematics in 1881, which stated the probabilities of a number in many types of naturally occurring data, beginning with *d* for *d* = 1, 2, ...9. Newcomb’s first significant digit law received little attention and was largely forgotten until 50 years later when Frank Benford, a physicist at General Electric research laboratories.

Benford noticed the same pattern of wear and tear on logarithm tables. After extensive testing (20,229 observations) on a wide variety of data – atomic weights, drainage areas of rivers, census figures, baseball statistics, and financial data (among other things) Benford published the same probability law concerning the first significant digit in the Proceeding of the American Philosophical Society (Benford, 1938). This time, the first

<sup>25</sup> Frey, Bruce, Statistics Hacks – Tips & Tools for Measuring the World and Beating the Odds, O’Reilly Media, Inc., (Sebastopol, CA – 2006), page 268.

significant digit law attracted greater attention and became known as Benford's Law. Despite wide awareness of the 1938 paper it lacked a rigorous mathematical foundation until that evidence was provided by Georgia Tech Mathematics Professor Theodore Hill in 1996 (Hill, 1996).

Benford's Law states that digits and digit sequences in a dataset follow a predictable geometric pattern. The technique applies a data analysis method that identifies possible errors, potential fraud or other irregularities. For example, if artificial values are present in a dataset the distribution of the digits in the dataset will likely exhibit a different shape (when viewed graphically), than the shape predicted by Benford's Law.

The technique counts digit sequences of values in the dataset (e.g., cleared checks, deposits, transfers, payment records, etc.) and compares the totals to the predicted result according to Benford's Law. Non-zero digits are counted from left to right.

Despite its origin in the 1930s, Benford's Law was not recognized as an effective tool for audit and fraud analysis until the late-1990s. Its present day use was formalized and popularized by Mark Nigrini, Ph.D., professor of St. Michael's College in Colchester, VT. Dr. Nigrini's Internet site provides excellent foundation for Benford's Law: [www.nigrini.com](http://www.nigrini.com). Dr. Nigrini is perhaps single-handedly responsible for pushing Benford's Law to the forefront of today's forensic accountant.

The analysis of the output is based upon 4 Major Digital Tests. The output of the tests and resultant conclusions using XYZ's financial dataset are presented below.

### **Results of Applying Benford's Law**

Based upon the analysis of Benford's Law applied against 100% of the foundational transaction entries within XYZ it is clear that the transactions failed all 4 tests: First Digit, Second Digit, First Two Digits and First Three Digits. The implications of the failures lead to the following observations:

A significant proportion of XYZ's foundational transaction data appears to be contrived.

A significant proportion of XYZ's transactions containing "rounded" numbers appear to be excessive.

### **Major Digital Tests**

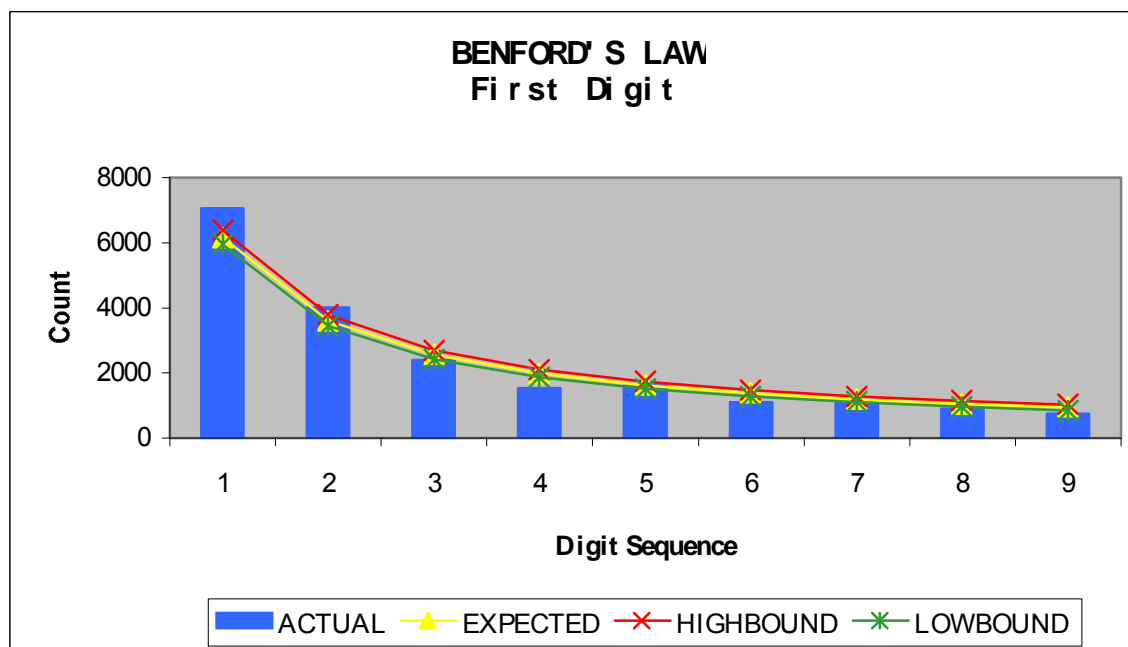
The digital analytical tests applied through Benford's Law are comprised of the following:

- ❑ **First Digits Test** - The first Major Digital Test is a test of the first digit proportions, a test for reasonableness. The first digit of a number is the leftmost digit with the understanding that the first digit can never be a zero. For example, the first digit of 7,380 is "7."
- ❑ **Second Digits Test** - The second Major Digital Test is a test of the second digit proportions, also a test for reasonableness. The second digit of a number is likewise determined by its placement within the number, thus the second digit of 7,380 is "3."

- ❑ **First 2 Digits Test** – This test is more focused than the 2 preceding tests and uses the first 2 leading digits, again excluding zeros. For example, the first 2 digits of 7,380 are “73” and the first 2 digits of 0.07380 are also “73.” There are 90 possible first-two digit combinations: 10 to 99 inclusive. This test finds anomalies in the data that are not readily apparent from either the first or second digits seen on their own.
- ❑ **First 3 Digits Test** – This test focuses on the 900 possible first 3 digit combinations: 100 to 999 inclusive. This highly focused test indicates abnormal duplications.

#### First Digits Test

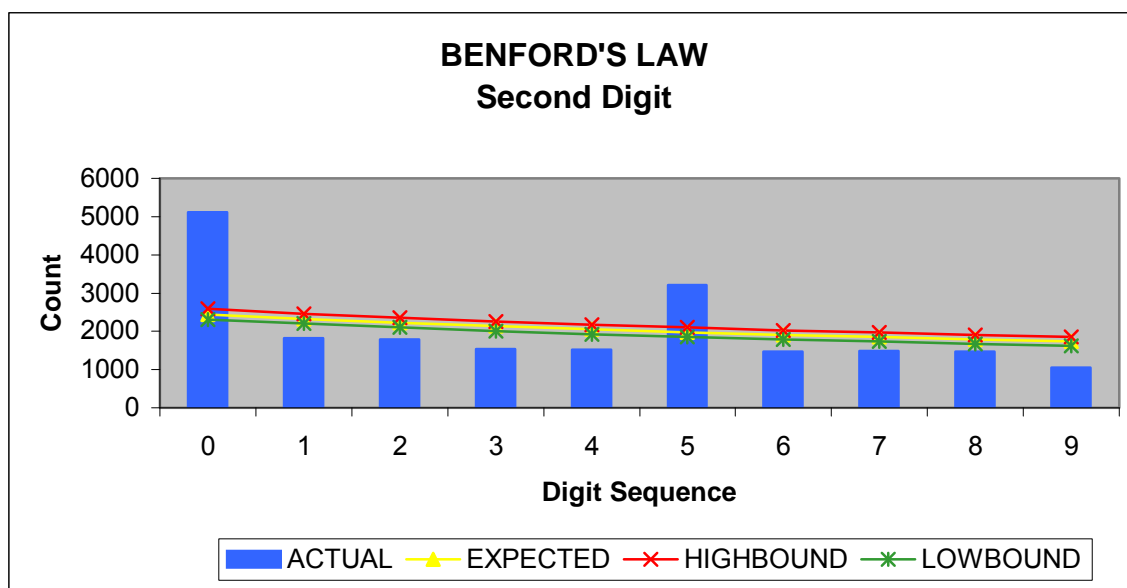
The results of the First Digit Test are indicated by the graph below. Applying the testing criteria indicates that the variations from the predicted norm suggest that anomalies exist throughout XYZ's financial dataset



The preceding graph indicates (among other observations) that the numbers “1” and “2” both exceed the expected counts by 14% and 11%, respectively. Additionally, the numbers “4” and “6” fall below the predicted limit, thus suggesting that anomalies exist within XYZ's financial dataset.

#### Second Digits Test

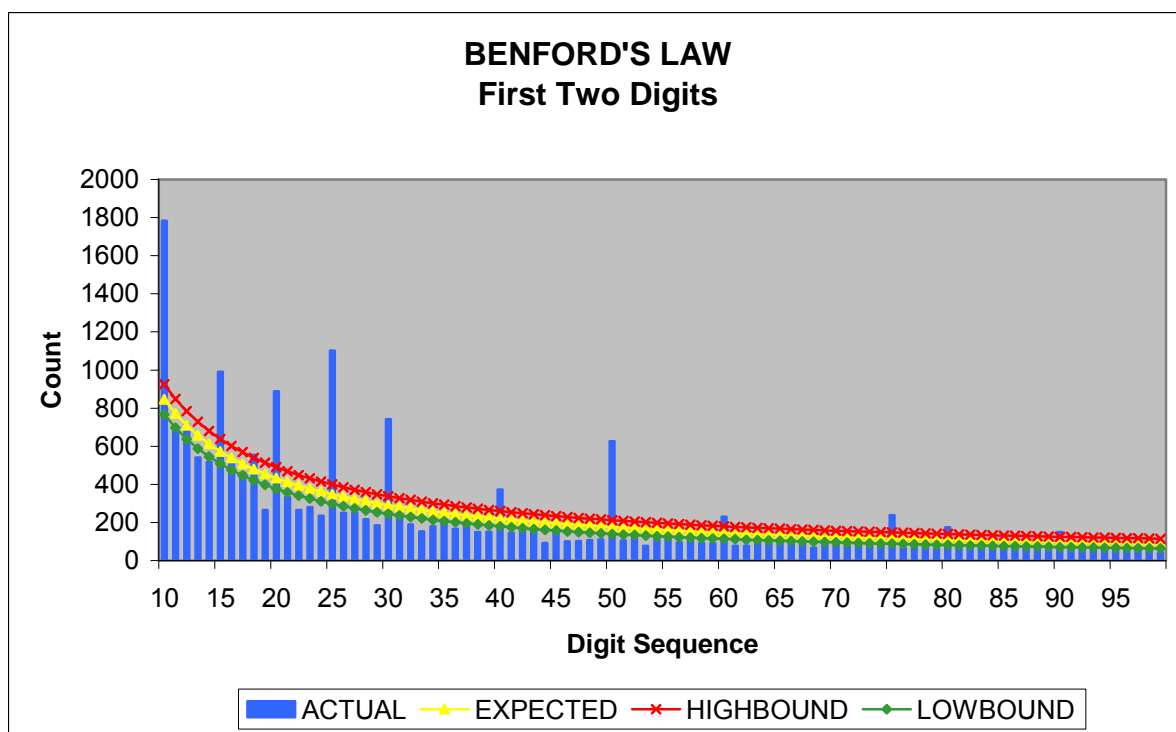
The results of the Second Digit Test are indicated by the graph below. Applying the testing criteria indicates that the variations from the predicted norm suggest that anomalies exist throughout XYZ's financial dataset



The preceding graph indicates (among other observations) that the numbers “0” and “5” both exceed the expected counts by 110% and 61%, respectively, thus suggesting that anomalies exist within XYZ’s financial dataset. For example, an inordinately large amount of payments contained “0” or “5” as a second digit such as 10,000 or 15,000.

#### First 2 Digits Test

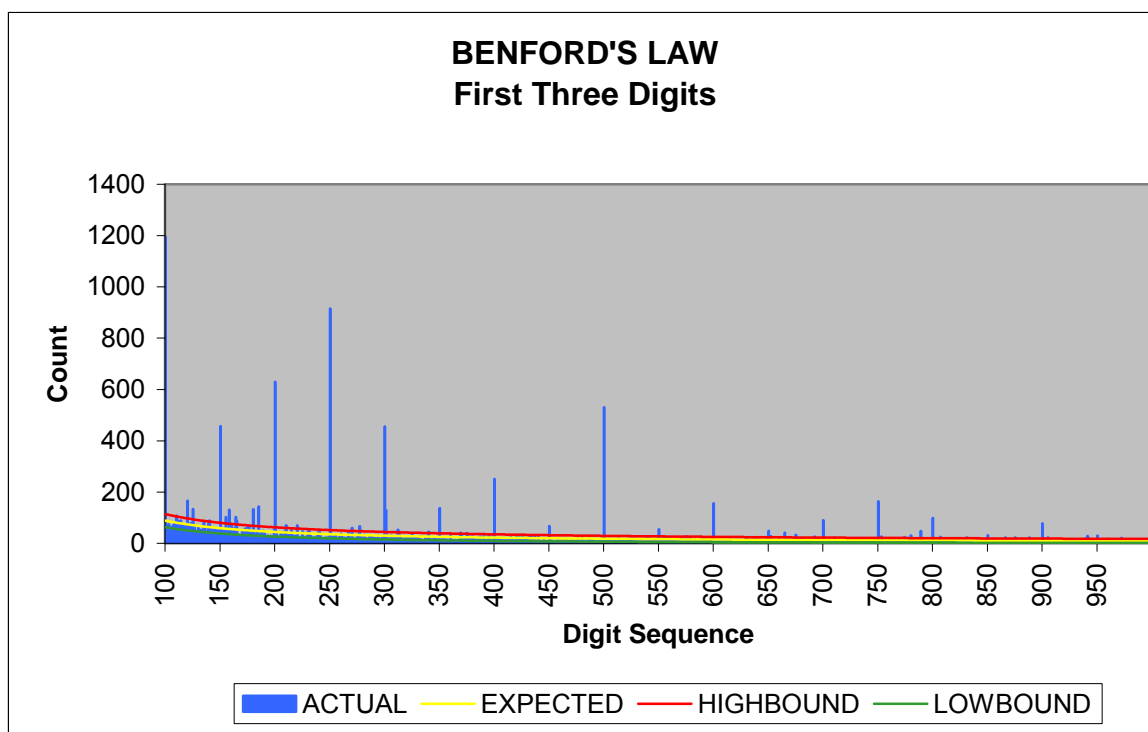
The results of the First 2 Digits Test are indicated by the graph below. Applying the testing criteria indicates that the several significant variations from the predicted norm suggest that anomalies exist throughout XYZ’s financial dataset.



The preceding graph indicates (among other observations) that the numbers “10”, “15”, “20”, “25”, “40” and “50” all exceed the predicted limit, thus suggesting that anomalies exist within XYZ’s financial dataset.

#### First 3 Digits Test

The results of the First 3 Digits Test are indicated by the graph below. Applying the testing criteria indicates that the several variations from the predicted norm suggest that anomalies could occur throughout XYZ’s financial dataset.



The preceding graph indicates (among other observations) that the numbers “100”, “200”, “150”, “250” and “500” all exceed the predicted limit, thus suggesting that anomalies exist within XYZ’s financial dataset.

### OVERALL APPROACH

Generally, the approach to forensic accounting analysis should be initiated with exploratory methods so that scarce resources can be most effectively deployed. Then, those areas offering promise can be directly investigated.

### CONCLUSION

Forensic accountant testimony can be compelling in family law civil and criminal matters. The forensic accounting techniques, when properly applied by a duly qualified forensic accountant enable admission of a wide variety of evidence and opinion. However, it is essential that the party claiming forensic accounting capabilities be able to withstand challenges to his/her skills, knowledge, experience, education and training. Such capabilities can only be obtained by sources outside of typical CPA channels.

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