

Longtop Financial Technologies Ltd. Phony Cash From IPO Onward?

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A short-seller, Andrew Left, claimed that Longtop Financial Technologies Ltd., a Chinese company, was a fraud from its initial U.S. public offering (IPO) in 2007 onward until its delisting by the Securities and Exchange Commission (SEC) in 2011 (Left, 2011a). This case investigates that claim. It is amazing if such a possible fraud went undiscovered by the IPO investment bankers, Goldman Sachs and Deutsche Bank, the secondary public offering investment banker, Morgan Stanley, and the Longtop auditors, Deloitte Touche Tohmatsu CPA Ltd., a “Big 4” audit affiliate or firm, registered in Shanghai.

Longtop was a Chinese software developer and technology services provider, started in June, 1996 and based in Xiamen, China. It provided technology services and created both standardized and custom-designed software for banks in China, including three of the four largest state-controlled banks: China Construction Bank, Agricultural Bank of China, and Bank of China.

Its two key officers and co-founders were Xiaogong Jia and Weizhou Lian. Mr. Jia had served as the chairman of the board (COB) since Longtop’s inception and had over 29 years of experience in China’s information technology (IT) industry. At the time of the IPO, he was a director of the China Business Council, a director of Fujian Computer Society, vice-president of Xiamen Computer Society and vice chairman of Xiamen Software Industry Society. Prior to co-founding Longtop, he had served as deputy head engineer, vice general manager and general manager of Xiamen Longtop Electronic Computer Company. Mr. Lian had served as a Longtop director and chief executive officer (CEO) since its inception and had over 20 years of

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experience in China's IT industry. Prior to co-founding Longtop, he had served as technology department manager, sales department manager, vice general manager and general manager of Xiamen Longtop Electronic Computer Company.

This short-seller, Andrew Left, noted that both Longtop executives conveniently left out of their Longtop IPO bios that they both had worked for Xiamen Dongnan Computer Company before founding Longtop. They had been sued by this former employer for unfair business practices. In that lawsuit, they were found liable for drawing salaries from their former employer while working for their own company, Xiamen Dongnan Rongtong Electronic, which they founded in July, 1996 and for which they recruited 43 of their prior co-employees. They also had set up a new address, a PO Box, for their own company to illegally intercept its mail (Left, 2011a).

Key Dates

On October 23, 2007, Longtop Financial Technologies Ltd. went public on the New York Stock Exchange (NYSE) and sold 10.4 million American Depositary Shares (ADS) at \$17.50 per share, raising \$182 million. (ADS represent a specified number of shares in a foreign corporation and are traded on U.S. stock exchanges after being issued and sponsored in the U.S. by a bank or a brokerage firm.) By the end of the first day, the stock had risen to \$32.40 per share. Goldman Sachs and Deutsche Bank led this IPO with Deloitte Touche Tohmatsu as the auditors. Morgan Stanley led a 2009 secondary offering of more shares. In November 2010, Longtop's market capitalization peaked at \$2.4 billion (56 million shares at \$42.86).

On April 26, 2011, Andrew Left, founder of Citron Research, a subscription service of short selling research, published a report on his website, accusing Longtop of widespread fraud: "Citron introduces a story that has all the markings of a complete stock fraud---with off balance

sheet transactions that created outsized margins and management with backgrounds unsuitable to run a public company. The most obvious risk factor in the China space is the factor that has linked so many of these collapsed stocks: the story is too good to be true. In this report, Citron outlines several concerns which should be considered by the auditors as they prepare Longtop's annual audit. It is the opinion of Citron that every financial statement from its IPO to this date is fraudulent...read on to understand" (Left, 2011a).

Major topics in this Citron report were margins far in excess of competitors, an unconventional staffing model, key management background misdeeds, non-transparent management transactions, and a note to analysts (Left, 2011a): "Citron says do what you are paid to do...Start ANALYZING. The last thing Wall Street needs is more discounted cash flow analysis based on management's forecasts. Citron challenges you to answer these concerns without starting with the phrase: after discussions with management. Do Longtop's margins truly pass the smell test in cost-competitive China? Does the staffing story make perfect sense to you? How about management's stock gifts? If not, what are the risks of massaged revenue recognition and/or the ugly implications of related party impacts on acquisitions, cost accounting, and stock transactions?" Citron's report also noted nonsensical answers the company had given which left critical investors thinking "they are just making it up as they go along" (Left, 2011a). Also, Citron and other short selling research firms were asking why Longtop needed such large amounts of cash and they were even questioning whether such cash existed (Bases et.al, 2011).

On April 28, 2011, Longtop's Chief Financial Officer (CFO), Derek Palaschuk, a Canadian accountant, tried to reassure financial analysts that the fraud claims were bogus. He wrapped himself in the prestige of his company's auditor, Deloitte, a "Big 4" audit firm, saying

that those who questioned Longtop were “criticizing the integrity of one of the top accounting firms in the world.” He also said that his relationship with Deloitte was “very close, third only to his relationship to his family and the CEO” (Bases et.al, 2011).

On May 4, 2011, a possible red flag was the resignation of Longtop’s CFO as head of the audit committee of the Chinese company, Renren, which was a heavily anticipated U.S. IPO. Also, a Morgan Stanley analyst wrote: “Longtop’s stock price has been very volatile in recent days amid fraud allegations that management has denied. Our analysis of margins and cash flow gives us confidence in its accounting methods. We believe market misconceptions provide a good entry point for long-term investors.” At the time of these reports, Deloitte was in the process of completing its Longtop audit for the fiscal year ending March 31, 2011. It had previously given unqualified or clean audit opinions to Longtop for six consecutive years and apparently was well on its way to providing a seventh clean opinion (Norris, 2011).

On May 9, 2011, Citron Research posted another Longtop report, (Left, 2011b) questioning how anyone charged with verifying the accuracy of Longtop’s Financials could look at such documents and dismiss the reasonable concern (not to mention professional skepticism) that Longtop’s largest expense line item was being transacted through a related party, Longtop Human Resources, with full transparency. This human resource company was located on the premises of Longtop Financial Technologies, which was its only client, used the same email servers, and used the legal department personnel of Longtop Financial Technologies to sign its own Chinese government filings. Citron’s opinion was that believing an unrelated third party ran your human resource business to make \$30,000 a year (according to its filings) was as crazy as believing that the COB of Longtop Financial Technologies would just give away \$80 million in stock to his employees because money did not really mean that much to him (per the

explanation of Longtop's CFO). "Citron hopes this can end any debate as to whether the company has been deceiving its investors. It is not the time to host any more conference calls or cover ups. The excuses have run their course. It is now time to confess, let the auditors figure out the necessary restatements, and let the real Longtop Financial Technologies stand up" (Left, 2011b).

On May 17, 2011, Deloitte did not say why but expanded its procedures related to cash, the largest balance sheet item. Cash totaled \$423 million or 57% of Longtop's assets. Within hours of beginning this new round of cash confirmations to bank headquarters, rather than to the local branches that had previously confirmed Longtop's cash balances, Longtop stopped the confirmation process and told the banks that Deloitte was not really its auditor. Despite these Longtop efforts, Deloitte learned that Longtop did not have the cash it claimed and that there were also significant bank borrowings not included on Longtop's books. (In the U.S., electronic audit confirmations have been adopted by more than 8,000 accounting firms and all of the largest 10 banks. In China, the "Big 4" affiliates, other Chinese auditing firms, and the major Chinese banks need to get together to work out a system for online confirmations (Gillis, 2011).

On May 20, 2011, Longtop's chairman told Deloitte's Eastern Region Managing Partner that "there was fake revenue in the past so there was fake cash recorded on the books." The chairman did not answer when questioned as to the extent and duration of the discrepancies. When asked who was involved, he answered: "senior management." Such irregularities resulted in Deloitte resigning and the NYSE suspending trading of Longtop's stock. The final trade on the NYSE was at \$18.93 for a market capitalization of \$1.1 billion versus the peak of \$2.4 billion just six months earlier (Norris, 2011).

On May 22, 2011, Deloitte sent a resignation letter to the chairman of Longtop's Audit Committee who was also the CFO of a NYSE-listed Chinese company, Xinyuan, and a director of another NASDAQ-listed Chinese company, eLong. Both of these Chinese companies had initially listed in the U.S. by reverse mergers or reverse take-overs. Deloitte wrote that "we bring these significant issues to your attention in the context of our responsibilities under Statement on Auditing Standards (SAS) No. 99, Consideration of Fraud in a Financial Statement Audit. The reasons for our resignation include: 1) the recently identified falsity of Longtop's financial records in relation to its bank cash, loan balances, and also now seemingly in the sales revenue, 2) the deliberate interference by the management in our audit process, and 3) the unlawful detention of our audit files. These recent developments undermine our ability to rely on the representations of the management which is an essential element of the audit process; hence our resignation" (Bishop, 2011).

On May 25, 2011, a class action lawsuit was filed by an investor, Joe Mikus (Mikus v. Longtop Financial Technologies Ltd., 2:11-cv-04402, U.S. District Court, Central District of California-Los Angeles). The lawsuit alleged that Longtop overstated profit margins and concealed adverse facts. It was filed by the New York-based Rosen Law Firm which had previously filed 20 investor lawsuits against Chinese companies listing in the U.S. by reverse take-overs (RTOs). In a RTO, a closely held company becomes public by purchasing a shell company that already trades on a public stock exchange. Thus, no S-1 Registration Statement for an IPO is required to be filed and analyzed by the SEC in the U.S. At least 370 RTO companies have obtained U.S. listings since 2004 (Gullo, 2011).

On August 29, 2011, the New York Stock Exchange delisted Longtop Financial Technologies Ltd., finding that its American depository shares were no longer suitable for continued listing and trading.

On November 11, 2011, the SEC charged Longtop with failing to comply with its reporting obligations because it failed to file an annual report for its fiscal year that ended March 31, 2011. Deloitte Touche Tohmatsu had previously stated in May, 2011 that its prior audit reports on Longtop's financial statements contained in annual reports for 2008, 2009 and 2010 should no longer be relied upon and had resigned from the Longtop audit. The SEC had recently filed a subpoena enforcement action against Deloitte Touche Tohmatsu, located in Shanghai, for failing to produce documents related to the SEC's investigation into possible fraud by Longtop, the audit firm's longtime client.

On January 22, 2014, SEC Administrative Law Judge, Cameron Elliot, barred all of the "Big 4" Chinese affiliates from auditing U.S.-listed companies for six months. These four firms said they will appeal the ruling. The judge's decision represented a major victory for the SEC which for years has tried with little success to gain access to audit working papers conducted by these "Big 4" Chinese affiliates for their audits of Chinese companies listed in the U.S. These accounting firms had repeatedly declined to share their audit working papers, saying that Chinese law forbids it. The SEC judge had little sympathy for these firms and said: "Respondents operated large accounting businesses for years, knowing that, if called upon to cooperate in an SEC investigation into their business, they must necessarily fail to fully cooperate and might thereby violate U.S. law. Such behavior does not demonstrate good faith, indeed, quite the opposite—it demonstrates gall" (Lynch, 2014).

Howard Schilit, a forensic accountant and financial analyst, has observed: “I read recently that the one lesson we have learned from history is that we have learned nothing from history. Yet my mantra remains that in order to find fraud, we must study the history of fraud. A common element in major frauds is that their warning signs were not hard to find; in fact, they were hard to miss” (Schilit, 2010). Another forensic accountant, Gordon Yale (2014) said: “All auditors must be forensic accountants in order to fulfill the responsibilities of SAS No. 99, Consideration of Fraud in a Financial Statement Audit.”

Required:

1. What were the “warning signs” of fraud at Longtop from the IPO onward?
 - a. Conduct a ratio analysis, including vertical and horizontal analyses, using Longtop’s financial statements in Tables 1-3.
 - b. Conduct a competitor analysis, using large profitable, publicly-held Chinese software companies, listed on the Shanghai and Hongkong stock exchanges in Table 4.
 - c. Conduct a fraud analysis, using the ratios and models in the Appendix.
 - d. What qualitative factors emerged as warning signs?

2. How could such “warning signs” have led to additional audit or forensic work to uncover this fraud?

Table 1
Longtop Financial Technologies Ltd.
Income Statements
Fiscal Years Ending 3/31

In Millions of USD	2010	2009	2008	2007	2006
Revenue	169	106	66	43	25
Cost of Revenue	63	36	26	7	3
Gross Profit	106	70	40	36	22
Selling, General, & Admin Exp.	35	20	30	21	6
Research & Development	8	6	4	2	1
Other Operating Expense	2	0	0	0	0
Total Operating Expense	45	26	34	23	7
Operating Income	61	44	6	13	15
Other, net	4	6	2	0	0

Income Before Tax					
Tax	65	50	8	13	15
Income After Tax	59	43	4	8	12
Common Shares Outstanding	56	51	50	38	30
Basic EPS	1.05	0.84	0.08	0.21	0.40

Table 2
Longtop Financial Technologies Ltd.
Balance Sheets
Fiscal Years Ending 3/31

In Millions of USD	2010	2009	2008	2007	2006
Cash	332	238	205	81	25
Accounts Receivable-Trade Net	67	31	21	17	9
Total Inventory	6	5	1	1	1
Other Current Assets	23	6	12	8	5
Total Current Assets	428	280	239	107	40
Property/Plant/Equip.--Gross	36	22	13	5	2
Accumulated Depreciation	-9	-8	-5	-2	-1
Goodwill, Net	96	25	15	5	5
Intangibles, Net	51	17	8	7	7
Other Long Term Assets	4	2	1	0	0
Total Long Term Assets	178	58	32	15	13
Total Assets	606	338	271	122	53
Account Payable	15	3	4	4	4
Accrued Expenses	15	9	19	19	16
Notes Payable/Short Term Debt	1	1	1	0	0
Other Current Liabilities	56	31	9	9	9
Total Current Liabilities	87	44	33	32	29
Total Long Term Debt	1	1	1	1	1
Other Liabilities	28	1	2	47	0
Total Liabilities	116	46	36	80	30
Common Stock	1	1	1	1	1
Additional Paid-In Capital	381	243	235	18	8
Retained Earnings	89	29	-14	22	13

Other Equity	19	19	13	1	1
Total Equity	490	292	235	42	23
Total Liabilities & Share. Equity	606	338	271	122	53

Table 3
Longtop Financial Technologies Ltd.
Statements of Cash Flows
Fiscal Years Ending 3/31

In Millions of USD	2010	2009	2008	2007	2006
Net Income	59	43	4	8	12
Depreciation	3	3	2	2	1
Amortization	5	3	1	1	0
Deferred Taxes	0	-1	-1	1	0
Share-based Compensation	13	6	28	13	1
Changes in Working Capital	-17	-12	0	-5	8
Cash from Operating Activities	63	42	34	20	22
Capital Expenditures	-13	-10	-5	-7	-8
Other Investing Cash Flows	-82	-4	-6	0	0
Cash from Investing Activities	-95	-14	-11	-7	-8
Financing Cash Flow Items	-11	0	0	1	1
Total Cash Dividends Paid	0	0	-36	0	-1
Issuance of Stock	137	3	147	41	3
Retirement of Debt	-1	-1	-10	-1	-1
Cash from Financing Activities	125	2	101	41	2
Foreign Exchange Effects	1	4	11	2	0
Net Change in Cash	94	34	135	56	16

Supplemental Information:

Cash Interest Paid	1	1	1	1	1
Cash taxes Paid	9	10	4	3	2
Stock Price of Common Shares	31.20	21.20	18.30	17.50	0.00

Table 4
Publicly Held China Software Companies
 12/31/10 (In US Dollars)

English Name	Sales	EBIT	Earnings
Tsinghua Tong-Fang	2,089,412,391	122,510,809	62,964,268
UFIDA Software	193,835,670	40,345,417	51,493,056
Founder Technology	1,202,621,568	41,697,931	29,732,041
Shenyang Neusoft	413,650,954	34,799,096	29,264,292
Digital China	3,400,182,788	51,949,025	27,881,250
Insigma Technology	778,006,654	34,045,223	21,756,133
Shanghai Baosight	261,235,724	21,761,782	19,557,470
Kingdee International	109,553,429	21,569,000	19,496,571
China National	272,130,178	9,612,008	9,249,762
Shenzhen Kingdom	136,905,112	6,943,380	4,897,551
Averages	885,753,447	38,523,367	27,629,239

Appendix: Red Flag Ratios and Models

Six various models and ratios have been used to develop a red flag approach in screening for and identifying fraudulent financial reporting and earnings management in publicly held companies in addition to traditional ratios. The models are available from the authors in an Excel file.

1. Quality of Earnings

The quality of earnings ratio is a quick and simple way to judge the quality of a company's reported net income. The ratio is operating cash flow for the period divided by net income for the period. The red flag benchmark is a ratio of less than 1.0 (Schilit, 2003). Also, large fluctuations in this ratio over time may be indicative of financial reporting problems, i.e., Enron's quality of earnings ratios were 4.9, 1.4, and 2.3 over its last three years of operation. In its last year of operation, Enron forced its electricity customers to prepay in order to receive any electricity which dramatically increased its operating cash flows and quality of earnings ratio. Quality of earnings is also meant to measure whether a company is artificially inflating earnings, possibly to cover up operating problems. This ratio may indicate that a company has earnings which are not actually being converted into operating cash. Methods for inflating earnings (but not operating cash flows) include early booking of revenue, recognizing phony revenues, or booking one-time gains on sales of assets.

2. Quality of Revenues

The quality of revenues ratio is similar to the quality of earnings, except that the emphasis is on cash relative to sales rather than cash relative to net income. It is the ratio of cash collected from customers (revenues plus or minus the change in accounts receivable) to the company's revenue. Similar to the quality of earnings ratio, the red flag benchmark is a ratio of less than 1.0 (Schilit, 2003). For example, Enron's quality of revenues went down from 0.98 to 0.92 in its last year of operation. Since manipulation of revenue recognition is a common method for covering up poor results, this simple metric can help uncover schemes used to inflate revenues without the corresponding cash collection. Common methods include extending increased credit terms to spur revenues but with slow collections, shifting future revenues into the current period, or booking asset sales as revenue.

3. Sloan Accrual Measure

The Sloan accrual measure (Robinson, 2007) is based on the analysis of accrual components of earnings. It is calculated as follows: net income less free cash flows (operating cash flow minus capital expenditures) divided by average total assets. The red flag benchmark is a ratio of more than 0.10. For example, Sloan calculated that JetBlue had a ratio of 0.50 and his employer, Barclays Global Investors, shorted the stock and made over 12% in less than one year. This ratio is used to help determine the quality of a company's earnings based on the amount of accruals included in income. If a large portion of a company's earnings are based more on accruals, rather than operating and free cash flows, then, it is likely to have a negative impact on future stock price since the income is not coming from the company's actual operations. Since

many of the accrual components of net income are subjective, managers are able to manipulate earnings to make the company appear more profitable. Thus, the Sloan accrual measure is used to help determine the sustainability of a company's earnings.

4. Altman Z-Score

The Altman (2005) Z-Score is a multivariate statistical formula used to forecast the probability a company will enter bankruptcy within the next two years. The model contains five ratios which are listed below with their coefficients, based on Altman's research. The model was originally developed in 1968 for evaluating the bankruptcy risk of traditional public firms, such as manufacturing, energy, and retail, but it can also be applied to non-traditional and service public firms, such as software, consulting, and banking, as well as private firms. All three versions of the model are available on the Bloomberg software subscription package. The red flag bankruptcy prediction of the original model is a Z-Score of less than 1.8, with a score between 1.8 and 3.0 indicating possible bankruptcy problems. For example, Altman predicted that General Motors would "absolutely" seek bankruptcy protection and they come up very seriously in the Z-Score test into the bankrupt zone after a 30 to 60 day reorganization.

(Working Capital / Total Assets) x 1.2

This ratio is a measure of a firm's working capital (or net liquid assets) relative to capitalization. A company with higher working capital will have more short-term assets and, thus, will be able to meet its short term obligations more easily. This ratio is one of the strongest indicators of a firm's ultimate discontinuance because low or negative working capital signifies the firm may not be able to meet its short-term capital needs.

(Retained Earnings / Total Asset) x 1.4

This ratio is a measure of a firm's cumulative profits relative to size. The age of the firm is implicitly considered due to the fact that relatively young firms have a lower ratio and the incidence of business failures is much higher in a firm's early years.

(EBIT / Total Assets) x 3.3

A healthy company will be able to generate income using its assets on hand. If this ratio is low, it demonstrates that profitability is poor and the company is in danger of bankruptcy as it is more vulnerable to market downswings which affect earnings.

(Market Value of Equity / Book Value of Total Liabilities) x 0.6

This ratio adds a market emphasis to the bankruptcy model. The theory is that firms with high capitalizations would be less likely to go bankrupt because their equities have higher values. In addition, it will gauge the market expectations for the company which should take into account relevant future financial information.

(Sales / Total Assets) x 1.0

This ratio, also known as total asset turnover, demonstrates how effective the company is utilizing its assets to generate revenue. If this number is low, it indicates that the company is not being run efficiently which creates a higher bankruptcy risk.

5. Z-Score (Beneish Old Fraud Model)

Beneish (1999) developed a statistical model used to detect financial statement fraud and earnings management through a variety of metrics. There are five key ratios used in the model, which are the Sales Growth Index (SGI), Gross Margin Index (GMI), Asset Quality Index (AQI), Days Sales in Receivables Index (DSRI), and Total Assets to Total Accruals (TATA). Each of these measures with its model coefficient, based upon Beneish's research, is outlined below. There is also a constant value in the model of -4.840. The red flag benchmark is a Z-Score greater than a negative 1.99, i.e., a smaller negative number or a positive number indicates possible financial reporting problems. For example, Enron had a fraud Z-Score of a positive 0.045 in its last year. Also, this model is the only one with fraud guidelines for each of the model's five inputs as follows:

	Non-Manipulator's Mean Index	Manipulator's Mean Index
DSRI	1.031	1.465
GMI	1.014	1.193
AQI	1.039	1.254
SGI	1.134	1.607
TATA	0.018	0.031

DSRI – Days Sales in Receivables Index x 0.920

This measure is accounts receivable divided by sales (DSRI) this year divided by DSRI last year. Companies that are trying to boost revenue and profit may allow customers to have greatly extended credit terms so that they will buy earlier. This practice increases revenue in the current quarter but may hurt future performance. This metric is meant to detect companies which make significant changes in their collection policies and/or recognize phony or early revenues.

GMI – Gross Margin Index x 0.528

This measure is last year's gross margin divided by this year's gross margin. While not necessarily a direct measure for potential manipulation, companies that are experiencing declining gross margins may have increased pressure to improve financial performance. Such pressure may cause them to turn to fraud or questionable financial reporting to maintain net income margins.

AQI – Asset Quality Index x 0.404

This measure is the percentage of total assets that are intangible assets this year

divided by the same percentage calculation for last year. An increase in this index may represent additional expenses that are being capitalized to preserve profitability. Rather than expensing various costs, such as research and development or advertising, these costs are being capitalized as intangible assets or goodwill is established in a merger and acquisition deal. Capitalization increases assets while helping to maintain the profitability of the company.

SGI – Sales Growth Index x 0.892

This measure is current year sales divided by prior year sales. It is meant to detect abnormal increases in sales which may be the result of fraudulent revenue recognition. If a company experiences a very large increase in sales from one period to the next, it may be due to shifting revenue to a later period or booking phony revenue.

TATA – Total Accruals to Total Assets x 4.679

This measure represents total accruals to total assets. Total accruals represent non-cash earnings and are measured as follows: change in working capital – change in cash – change in current taxes payable – current year depreciation & amortization. Similar to Sloan's accrual measure and the accrual measure in the Dechow fraud model, an increase in accruals represents an increased probability of earnings manipulation and possible operating and free cash flow problems.

6. F-Score (Dechow New Fraud Model)

This F-Score fraud model (Dechow, Ge, Larson, and Sloan, 2007) can be used as a test for determining the likelihood of financial reporting manipulation. Similar to the other models and ratios, a fraudulent score for this model does not necessarily imply such manipulation but it serves as a red flag for further analysis. The model contains measures to identify problems in accruals, receivables, inventory, cash sales, earnings and stock issuances as discussed below with their coefficients. There is also a constant value of -6.753 in the model. The resulting predicted value (PV) is used in an exponential equation: $e^{PV} / 1 + e^{PV}$ to get a company fraud probability. This probability is divided by the unconditional (and constant) fraud probability of all the sample companies' financial years: $494 / (143,452 + 494) = 0.0034$. The F-Score result is a fraud red flag if greater than 1.0. For example, the F-Score for Enron in its last year of operation was 1.85. This research is the more extensive of the two fraud models since it was based upon an examination of all Accounting and Auditing Enforcement Releases (AAERs) issued by the SEC from 1982-2005 while the older Beneish study was based only on AAERs issued from 1982-1992.

Accruals x 0.773

Firms that engage in earnings manipulation typically have abnormally high accruals. A significant amount of non-cash earnings results in inflated earnings and is a warning sign for earnings manipulation. This measure is a complex calculation based upon adding three accrual measures that reflect changes from last year to this year,

essentially in the three sections of the statement of cash flows:

Change in working capital = current assets – cash – short-term investments –
(current liabilities – long-term investments)

Change in non-current operations = total assets – cash – long-term investments –
(total liabilities – current liabilities – long-term debt)

Change in financing = short-term investments - long-term investments – (long-
term debt – short-term debt + preferred stock)

The total of these three accruals measures is scaled by average total assets. Any
business transactions other than common stock are reflected in accrual measures
(Dechow et.al. 2007).

Change in receivables x 3.201

The change in receivables from last year to this year is scaled by average total
assets. Large changes in accounts receivables may indicate revenue and earnings
manipulation. Such manipulation can occur through the early or phony recognition of
revenue and large swings in accounts receivable will distort cash flows from operations.

Change in inventory x 2.465

The change in inventories from last year to this year is scaled by average total
assets. Large changes in inventory may indicate inventory surpluses, shortages,
obsolescence, or liquidation. For example, if the company uses the last-in first-out
(LIFO) method of accounting for inventory in a period of rising prices, selling older
inventory will result in lower cost of goods sold, i.e., LIFO liquidation of inventory units
or layers. This practice leads to inflated earnings.

Change in cash sales x 0.108

This measure is the percentage change in cash sales from last year to this year.
For a firm not engaged in earnings manipulation, the growth rate in cash sales should
approximate the growth rate in revenues. Thus, the change in cash sales is a key metric
to monitor when evaluating the potential for earning manipulation.

Change in earnings x -0.995

This measure is a percentage calculated as earnings divided by total assets this
year less the same measure last year. Volatile earnings may be indicative of earnings
manipulation. According to Dechow et.al 2007, a consistent theme among manipulating
firms is that they have shown strong performance prior to manipulations. The cause for
such manipulations may be a current decline in performance which may be covered up by
manipulating financial reporting.

Actual issuance of stock x 0.938

This measure is a dummy variable that is ON if additional long-term debt or equity securities are issued during the manipulation year and is OFF if no such securities are issued. Such issuances may indicate operating cash flow problems that need to be offset by additional financing. Also, issuance of stock may indicate that managers are exercising their stock options. The exercise of stock options may signify that managers are attempting to sell at the top because they foresee future underperformance of the company. Such insider sales resulted in the criminal conviction of Qwest's Chief Executive Officer and have been a significant non-financial red flag. For example, Qwest and Enron insiders made \$2.1 billion and \$1.1 billion, respectively, by exercising and selling their stock options before their firms' financial reporting problems became public.

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