Calculating estimates of the collectibility of accounts receivable and auditing those estimates is difficult. This article describes three techniques for assessing allowance for doubtful accounts estimates and complying with Statement on Auditing Standards (SAS) no. 57 and AU section 342, *Auditing Accounting Estimates*, which suggest auditors compare prior accounting estimates with subsequent results to evaluate the reliability of the process used to develop estimates.

Accountants have typically relied on accounts receivable aging as the primary tool for evaluating collectibility. Aging allows companies to generate estimates of uncollectible accounts at specific times. However, the technique does not consider the accuracy of past estimates, as mandated by SAS no. 57. An analysis of historical trends can provide useful information about an entity’s past accuracy and possible biases in estimating its allowance for doubtful accounts.

**TECHNIQUES FOR ANALYZING THE ESTIMATE-GENERATING PROCESS**

Exhibit 1 uses three years of data from Dell Inc. to describe three simple techniques for assessing past estimates of the allowance for doubtful accounts. Because the techniques use historical data, they give an indication of the effectiveness of past estimates. After they are described, the techniques are demonstrated using data from three technology companies—Dell, Apple Inc., and Cisco Systems Inc.—that exhibit markedly different historical patterns in the estimation and use of their allowances for doubtful accounts. All data used in this article is available in these companies’ filings at sec.gov.
Technique 1: Compare bad debt expense (BDE) to write-offs (WO). Bad debt expense recorded in a specific year implies the necessity for write-offs during that year and subsequent years. While it is unrealistic to expect estimated bad debt expense to perfectly match actual write-offs in a given year, it is reasonable to expect the ratio of bad debt expense to write-offs to be close to 1.0 over an extended period. Ratios calculated for multiple years that are substantially lower than 1.0 might suggest the entity tends to underestimate the impact of collection problems. On the other hand, multiple-year ratios that significantly exceed 1.0 may signal that the entity is accumulating an excessive allowance. In addition, inspecting the individual year bad-debt-expense-to-write-offs ratios, as well as the standard deviation of those measures, can give a sense of the consistency of the relationship between these two figures over time. A standard deviation that is relatively low, when compared with the multiyear mean, is an indication of consistency.

Technique 2: Compare beginning allowance for doubtful accounts (BADA) to write-offs (WO). This ratio is computed each year using the beginning-of-year allowance for doubtful accounts as the numerator and write-offs of accounts receivable recorded during the year as the denominator. The beginning-allowance-to-write-offs ratio indicates how adequately the allowance accommodated subsequent write-offs. Lower ratios suggest the beginning-of-year allowance may not have been large enough to absorb impending write-offs, while inordinately high ratios might indicate the entity was accumulating excessive allowances. It is useful to examine both the mean and standard deviation of the beginning-allowance-to-write-offs ratio over a period of several years. The mean can be compared to the benchmark figure of one to two years to determine whether a firm’s allowance for doubtful accounts balance is reasonable in relation to subsequent write-offs. Meanwhile, the standard deviation of the ratio measures volatility. A relatively low standard deviation, in comparison to the multiyear mean, signals consistency. A relatively high standard deviation indicates a volatile relationship between the allowance and subsequent write-offs.

Technique 3: Assess the allowance exhaustion rate. Exhaustion rates indicate the time (expressed in years) taken to use the beginning-of-year allowance in the form of actual write-offs. For example, a company with a beginning allowance for doubtful accounts of $1 million in year one, and write-offs of $700,000 in year one and $600,000 in year two would exhaust its allowance in 1.5 years ($1 million - $700,000 = $300,000 left for the next year; $300,000 / $600,000 = 0.5 years).

THE TECHNIQUES IN ACTION
The three example corporations, Dell, Apple and Cisco—all manufacturers in the high-tech industry—exhibit very different patterns when estimating collectibility and establishing allowances.

Dell’s bad-debt-expense-to-write-off ratio (see Exhibit 2) for the nine years from 2000 to 2008 is 1.15, which is
reasonably close to the benchmark of 1.0. Although Dell exhibited two years of possible overestimation in relation to actual write-offs in 2000 and 2001, the company has more closely matched bad debt expense with write-offs since 2002.

Interestingly, Dell’s bad debt expense increased over the past few years. Dell’s increased write-off activity in the past few years is likely evidence that the higher expenses are warranted. In fact, write-offs during the past four years are only slightly lower than the beginning balances in Dell’s allowance for doubtful accounts, indicating that Dell has been successful at predicting anticipated write-offs. This conclusion is reinforced by Dell’s beginning-allowance-to-write-offs ratio and its exhaustion rate, both of which indicate Dell tends to exhaust its allowance in a little over one year. In addition, the standard deviation of Dell’s beginning-allowance-to-write-offs ratio over nine years is a relatively low 0.35, indicating a good deal of consistency in the relationship between the allowance for doubtful accounts balance and subsequent write-offs.

On average, Apple’s bad debt expense (see Exhibit 3) has been significantly lower than its write-offs for the past nine years. The multiyear bad-debt-expense-to-write-off ratio of 0.77 shows that Apple’s bad debt expense for the nine years has fallen short of the write-offs it recorded over the same period.

However, the beginning-allowance-to-write-offs ratio and exhaustion rates indicate that Apple’s allowance for doubtful accounts was exceedingly high prior to 2000. On average, Apple had a beginning-of-the-year allowance for doubtful accounts that was almost seven times higher than annual write-offs from 2000 to 2008. The inconsistency in the relationship between Apple’s allowance balance and write-offs is evidenced by the high, relative to the mean, standard deviation of that ratio over the period. This inference of inconsistency is confirmed upon review of the wide range (from lows of 3.20 in 2001 and 3.06 in 2007 to a high of 15.67 in 2008) exhibited by Apple’s beginning-allowance-to-write-offs ratio over the period.

By recording cumulative bad debt expense that fell short of write-offs over the past nine years, Apple has taken steps to adjust its allowance downward over time. However, Apple does not appear to have completely eliminated its excess

Apple’s exhaustion rate data is particularly informative. The analysis indicates that Apple maintains an extraordinarily large allowance for doubtful accounts. As of the end of 2008, Apple had not yet exhausted the allowance that was in place at the beginning of 2004. These analyses indicate a possible need for Apple and its auditors to critically re-examine the estimation process.

A review of the bad-debt-expense-to-write-off ratio for Cisco Systems (see Exhibit 4) indicates the relationship between bad debt expense and write-offs has been highly erratic. Cisco’s estimation challenges might be linked to the Internet bubble of the early 2000s. Possibly in anticipation of customer nonpayment associated with the bursting of the Internet bubble, Cisco recognized an exceptionally large bad debt expense in 2001 and, to a lesser extent, 2002. Subsequent write-offs were relatively small. Similar to Apple, Cisco’s beginning-allowance-to-write-offs ratio over the nine-year period indicates possibly excessive allowances. In addition, the ratio reveals an inconsistent relationship between the balance in the allowance for doubtful accounts and later write-offs.

Although an apparent attempt was made to correct the estimation problem in 2003 by recognizing a negative expense, the large bad debt expense recorded in 2002 remained untapped (in the form of write-offs) as of 2008. The analyses indicate that Cisco and its auditors might want to consider the reasons an allowance of this magnitude was recorded and whether those or other reasons continue to justify Cisco’s current allowance. Cisco’s estimation history with respect to the allowance for doubtful accounts illustrates the potential for overestimates of bad debt expense to have long-lasting effects.

**IMPLICATIONS OF THE ANALYSIS**

Assessing the effectiveness of past estimates provides a potential basis for confidence in future estimates. The techniques illustrated in this article are designed to help with and clarify assessment of an entity’s past success in estimating its allowance for doubtful accounts. While economic circumstances vary, historical trends provide useful information about the process used to form estimates.

AU section 342.04 states that estimates’ subjective nature makes these decisions vulnerable to bias and that such bias is likely to be present under any economic conditions. If prior trends suggest that an audit client has regularly over- or underestimated its allowance, but has not done so in an effort to manipulate net income or financial ratios, then the treatment under FASB Statement no. 154, *Accounting Changes and Error Corrections*, is clear. The adjustment is considered a change in estimate and is accounted for prospectively.

On the other hand, if prior misstatements of the allowance were material to the financial statements as a whole and were intentional, a restatement of prior periods is required. We’re aware of no evidence indicating that any of the companies in our analysis used the allowance for doubtful accounts to intentionally misstate or manipulate any financial results.

However, auditors should keep in mind that accounting estimates, such as the allowance for doubtful accounts, can be used to manage earnings. For example, a company might opportunistically reduce the allowance in a period of reduced earnings. Auditors are wise to weigh all available evidence, including data related to prior estimates and the client’s current financial condition, when a client proposes a substantial reduction in or increase to its allowance for doubtful accounts.
accounts.

A broader look at the industry in which Apple, Cisco and Dell operate reveals that estimating the allowance for doubtful accounts is not an easy task. In examining data for fiscal years starting in 2000 and ending in 2007 for 111 firms (eight annual observations per firm, or 888 observations in total) in the industrial and commercial machinery and computer equipment group (two-digit SIC code 35), we found that 21.1% of corporations had surprisingly large allowances. This group included 65 instances in which firms recorded either negative or no write-offs during the year and 123 cases in which the BADA/WO ratio was 10.0 or higher.

We noted allowances that were possibly inadequate in almost 5% of the firm years we examined, finding 44 cases in which annual write-offs exceeded the beginning allowances for the years in which the write-offs occurred. Initial results of our research indicate that such inconsistencies in the relationship between the beginning allowance for doubtful accounts and the amount of write-offs taken during the year exist in other industries as well.

It is crucial for accounting professionals to use all available tools to understand the effectiveness of past estimates and maintain the confidence of financial statement users in the stated net receivables. The techniques demonstrated in this article will help auditors comply with SAS no. 57 and assess clients’ current allowances by providing valuable information about the accuracy of past estimates.

EXECUTIVE SUMMARY

- **Aging is the most common technique** used to value receivables. However, several other analysis techniques can provide insight regarding the accuracy of prior estimates and the effectiveness of the estimation process.

- **Comparing bad debt expense each year to write-offs during that year** is one measure of the accuracy of bad debt estimates. Calculating the ratio over multiple periods, rather than a single year, provides the most useful information.

- **Comparing the beginning allowance for doubtful accounts to subsequent write-offs** determines the adequacy of the existing allowance. Lower ratios indicate the allowance may be too low, while higher ratios may signify the accumulation of excessive allowances.

- **The allowance exhaustion rate** is the amount of time it takes to write off an allowance. A corporation may be accumulating excessive allowances if it takes several years to exhaust its allowance for doubtful accounts receivable balance.

- **Evidence suggests that some companies** have great difficulty in estimating collectibility. Accountants potentially benefit by using additional tools that shed light on the accuracy of past estimates.

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