

# USING JUDGMENT TO MEASURE THE ALLOWANCE FOR DOUBTFUL ACCOUNTS

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## **ABSTRACT**

Practicing accountants commonly apply judgment when computing financial statement numbers. However, intermediate accounting textbooks rarely discuss judgment, leaving accounting students with the erroneous impression that accounting computations each have “one right answer.” The purpose of this paper is to correct that impression with examples of how judgment is applied to the reporting of accounts receivable. The background reading describes factors affecting the collectibility of accounts receivable, and a group class exercise has students apply judgment to compute allowance account balances. Students discover that correctly applied judgment may lead to “multiple right answers.” This exercise focuses on the allowance account balance because the calculation appears to be mechanical but is, in reality, based on the application of significant judgment. Instructors can easily incorporate this material into their intermediate accounting courses because the classroom exercise takes minimal class time and flows easily from traditional coverage of the allowance for doubtful accounts.

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### FACTS

Members of the group are accountants for a company (the “seller”) that has \$4,000,000 in outstanding accounts receivable as of 12/31/20X1 (its fiscal year end). The group must compute the ending balance in the allowance for doubtful accounts (i.e. the amount of the \$4,000,000 expected to be uncollectible) for presentation on the 12/31/20X1 balance sheet. The balance sheet will show the following:

Accounts Receivable	\$4,000,000
<u>(Allowance for Doubtful Accounts)</u>	<u>(The focus of this analysis)</u>
Net Accounts Receivable	\$x,xxx,xxx

The seller used the *Percentage of Receivables* method and a four percent estimated default rate in each of the last five years (up through 12/31/20X0). Each year, the estimated default rate proved highly accurate; four percent of the receivables actually were uncollectible and were written off. If the group uses a four percent default rate for the year 20X1, it would obtain an allowance balance of \$160,000 and, thus, net accounts receivable of \$3,840,000.

The group has information (one of the situations below) about the collectability of the 12/31/20X1 receivables. Based on the facts given and on assumptions the group needs to make, apply judgment to estimate an allowance balance. The balance should measure the dollar amount of uncollectible receivables as accurately as possible. Assume all amounts are material.

#### *Situation #1: Industry Concentration*

ABC Airline Company is a major customer, and ABC owes the seller \$1,000,000 of the \$4,000,000 total accounts receivable. On 12/10/20X1, a major event occurred. Since then, the number of passengers flying with ABC declined by 50 percent relative to the rest of the year. Assume that the product cannot be repossessed from ABC and assume the default rate for the seller’s other customers will be the same as in prior periods.

#### *Situation #2: Collection Efforts*

As stated above, the historical default rate has been four percent for each of the last five years. The seller’s management establishes an internal collection agency to reduce the default rate for current (i.e. 12/31/20X1) and future receivables. The new agency will include the four people who were previously responsible for collections and four new people hired specifically for this purpose. The new collection agency begins operations on 1/2/20X2. (Note: The 12/31/X1 account receivables will be collected in the year 20X2. Thus, the default rate should be estimated based on the new collection procedures). Assume that the product cannot be repossessed from the customers.

#### *Situation #3: Collateral Recovery*

The seller sells private airplanes to individuals. Assume each customer pays for the airplane over a three-year period. On 12/22/20X1, the group learns that one customer has serious financial problems. This customer purchased a custom airplane on 1/20/20X1 for \$1,500,000 and still owes the seller \$1,000,000. (This \$1,000,000 is included in the \$4,000,000 accounts receivable balance.) Because this customer has never missed a payment, it is possible that he will continue to pay the

seller. However, given his financial problems, the group assigns a high expected default rate of 95 percent to his account receivable. If the customer stops making payments, the seller will attempt to repossess the airplane and sell it for cash.

### Group Assignment

For your assigned situation (i.e. ignoring the other situations) provide the following:

1. A detailed description of all additional information the group needs in order to compute the balance in the 12/31/20X1 allowance for doubtful accounts.
2. The group's assumptions about each of the items listed in item 1.
3. The group's recommended balance in the 12/31/20X1 allowance for doubtful accounts, showing all supporting calculations.
4. The group's number for "Net Accounts Receivable" based on the allowance balance computed in item 3.

*Hints:* Identifying crucial missing information and describing all necessary assumptions are important parts of this assignment. Specify an appropriate allowance model for your assigned situation, incorporating all assumptions. Decide whether one or more default rates should be used, choose a percentage for each default rate, and decide whether collateral recovery will affect the dollar amount of uncollectible accounts. Finally, be careful not to violate conservatism.

### BACKGROUND READING FOR STUDENTS

The balance in the "Accounts Receivable" (A/R) account is the amount customers owe a company, but inevitably the company will not be able to collect the entire amount. If the company reported the unadjusted A/R balance as an asset on its Balance Sheet, the company's assets would be overstated. The uncollectible amount reduces the asset's value and this reduction in value is called *asset impairment*. According to Financial Accounting Standards Board (FASB) Accounting Standard Codification (ASC) 310-10-35-7 through 310-10-35-9, losses from uncollectible receivables are accounted for as loss contingencies. When it is probable that the asset (accounts receivable) has been impaired and when the amount of the impairment loss (i.e. the uncollectible amount) can be reasonably estimated, bad debt expense is recorded and an allowance is created to reflect the amount of the estimated impairment. The allowance balance is subtracted from accounts receivable to get "net accounts receivable" as shown on a balance sheet.

Accounts Receivable  
(Allowance for Doubtful Accounts)  
Net Accounts Receivable

Ideally, the net accounts receivable number is a good measure of the receivables that will later be collected in cash, i.e. the "net realizable value" of the accounts receivable.

Generally Accepted Accounting Principles (GAAP) allow multiple methods for measuring the impairment of accounts receivable, and computation of the allowance balance falls into two categories. The first computation category computes the "bad debt expense" number independently to provide a theoretically superior bad debt expense number, one that matches the expense with

corresponding revenue. The journal entry debits the bad debt expense account for this number. When the allowance account is credited for the same amount, the resulting ending allowance balance is a derived (i.e., “plug”) number. The allowance balance is not the target of the calculation and, thus, is not computed to give the best measure of uncollectible accounts. The *Percentage of Sales (Income Statement) Approach* (Kieso et al., 2010. p. 328) falls into this computation category.

The second computation category, referred to below as the **Allowance for Doubtful Accounts Model**, provides a theoretically superior allowance balance, superior because the allowance balance is the target of the computation. The accountant uses all information available to obtain the best estimate of the dollar amount of receivables that will not be collected. That amount becomes the target ending allowance balance and will be the amount ultimately reported on the Balance Sheet. A journal entry adjusts the current allowance balance using the amount needed to obtain the target ending balance, and debits bad debt expense for the same amount. The *Percentage-of-Receivables (Balance Sheet) Approach* (Kieso et al., 2010. p. 328) focuses on a target allowance balance. The following discussion and the class exercise focus exclusively on the second computation category, i.e. computing a target ending allowance balance that measures (as accurately as possible) the dollar amount of uncollectible accounts.<sup>1</sup>

### **The Allowance for Doubtful Accounts Model**

Each company measures the allowance balance consistent with its own accounts receivable collection pattern. Companies would use the *Percentage of Receivables* method to compute the allowance balance if one default rate applies to all receivables, while other companies that experience higher default rates for older receivables would use the *Aging of Accounts Receivable* method. Textbooks commonly mention these methods, but factors other than age may justify the use of multiple default rates and there are other factors (such as repossession) to consider.

When estimating uncollectible amounts, accountants must also consider the possibility that cash may be received from selling repossessed inventory. Selling companies that allow a customer to pay for a product over time often require collateral from the customer. The customer typically provides the product as collateral. If the customer does not pay as promised, the selling company may repossess the collateral and then re-sell it. The cash received, decreased by costs the seller incurs to repossess and sell the collateral, is called “net collateral recovery” and reduces the dollar amount expected to be uncollectible.

The allowance account balance can be computed by grouping together accounts receivable into categories with common default rates and applying the default rates to the receivables. Expected net collateral recovery is subtracted from the total. Assuming there are two classes of receivables, an *allowance model* may look like this:

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<sup>1</sup>This paper focuses on using judgment to obtain the best measure of uncollectible accounts and, thus, net accounts receivable. However, because GAAP allow multiple methods (e.g. the Income Statement Approach or the Balance Sheet Approach) for reporting bad debts, accountants must also exercise judgment when choosing which accounting method to use.

$$\text{Allowance Account Balance} = (\text{Default Rate 1}) \times (\text{Accounts Receivable in Category 1}) + (\text{Default Rate 2}) \times (\text{Accounts Receivable in Category 2}) - \text{Expected Net Collateral Recovery}$$

Accountants using this model must decide whether different classes of receivables (e.g. receivables with different ages, for different products, and from different classes of customers) exhibit collection patterns that are different enough to justify the use of multiple default rates. They then must estimate the necessary default rates and estimate net collateral recovery.<sup>2</sup> The next section demonstrates that these decisions require significant judgment by presenting factors that the accountant must consider.

## Using Judgment to Determine Components of the Allowance Model

### *Measuring Default Rates*

Textbooks typically explain allowance computations without providing details about how default rates are obtained. For example, Keiso et al. (2010) say “Using past experience, a company can estimate the percentage of its outstanding receivables that will become uncollectible, without identifying specific accounts” (p. 328). This statement is based on two assumptions. First, the selling company has past experience (or “history”) with its customers, and second, historical default rates are useful predictors of future defaults on current receivables. Accountants must carefully examine the validity of these assumptions before applying them in practice. This section discusses factors accountants must consider when estimating default rates for new customers (when no history is present) and when determining whether history, when available, is useful for predicting the default rates of current receivables. The company holding the accounts receivable, i.e. the company that must estimate the balance in the allowance account, will be referred to as the “seller” and the debtor (with an account payable to the seller) will be referred to as the “customer.” For simplicity, the discussion focuses on an individual customer, and the receivable from that customer is assumed to be material. In reality, default rates are applied to groups of receivables.

**Historical default rates are not available (new customers):** One example of this situation would be when the seller’s new customer is a startup company. The startup company has very little documentation of past credit at all, and has no payment history with this seller. Without the benefit of history, the seller would attempt to estimate future default rates by assessing the relation between the customer’s cash inflows and cash outflows. Significant cash outflows are needed for the startup company’s initial product development and product marketing, and the company may not have adequate cash inflows to cover all of the costs of operations. When determining default rates, the seller must assess not only the customer’s operating cash inflows and cash outflows, but also the timing and amount of the customer’s other debt payments. It is important that the seller do a

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<sup>2</sup>The person applying judgment to measure the allowance for doubtful accounts may be a company accountant, but could also be a controller, a director of financial reporting, or even an owner if the business is small. For ease of explanation, the decision maker is referred to as the seller’s accountant, but the discussion also applies to these other parties. In addition, accountants can use an unlimited number of allowance models. The model used is consistent with factors I consider important to discuss, but is not meant to encompass all factors accountants should consider when measuring the allowance for doubtful accounts.

thorough cash flow analysis for all customers, but especially for new customers without payment histories such as startup companies.

The seller must also consider its relationship with its customer. If the new customer is anxious to maintain good relations with the seller, then the customer will place high priority on payment of this debt. In addition, if the seller is anxious to maintain good relations with the new customer because, for example, the customer is expected to be a major source of revenue, then the seller may be willing to offer flexible payment arrangements. Thus, good relations would increase the chance of collection, reduce the default rate, and reduce the amount that would be included in the allowance account for this customer's receivable.

These factors demonstrate that the seller's accountant must apply significant judgment when determining a default rate for a new customer. The accountant may need to refer to the history of other customers in the same industry, of the same size, or of the same age (i.e. startup or mature company) when predicting the new customer's ability to pay, and must consider the factors below to determine whether that history should be adjusted.

**Using historical default rates:** Assume that the seller's accountant is determining the default rate to use for receivables as of December 31, 20X1 and that the outstanding receivables as of that date are from long-term customers (i.e. "history" is available). Also assume that for years ending last year (December 31, 20X0) and before, the accountant has used a two percent default rate to estimate the allowance balance and has found that over each of the last ten years, two percent of the receivables have actually been uncollectible. If circumstances have not changed, then the accountant may be justified in using a two percent default rate again for the December 31, 20X1 receivables. However, changing circumstances should make the accountant consider whether historical default rates apply to current receivables.

If sales are made to customers in multiple countries, the accountant should identify each country in which the seller has material receivables and examine the economic environment of each country separately. For example, some receivables may pertain to sales made in a country where the economy is transitioning from prosperity to economic recession while other receivables pertain to sales made in a country where the economy continues to expand. In addition, differences in the philosophy and actions of political leaders may have different impacts on critical economic indicators such as unemployment rates and the consumer price index. Furthermore, a legislature's change in income tax policy may lead to increased consumer spending and a healthier economy in a particular country. These types of items, along with other country-specific events, such as terrorist attacks, may have a dramatic effect on the ability to use historical default rates to determine future default rates.

In addition, the accountant should consider industry-specific factors because significant events may affect the debt-paying ability of customers within one industry differently than customers in other industries. For example, deregulation in the telecommunication industry forced even well-established companies to reduce profit margins, leading to significantly reduced cash flow. Similarly, the September 11, 2001 terrorist attacks on the United States had an especially negative impact on the airline industry. Airline companies experienced an immediate, sharp decline in demand and, thus, net cash flow that could be used to pay debt. A seller with customers in one of these industries who needed to determine expected default rates immediately after an event such as deregulation or September 11 would find little guidance from historical rates (except perhaps as lower boundaries).

The seller must exercise significant judgment in situations such as these; there is no reliable internal or external information that can be used to predict the effect these events would have on default rates.

Historical default rates may also bear little resemblance to current rates if the seller sets a goal of improving accounts receivable collection. If the seller hires more collections people, commits more resources, and tracks improvement, then it would expect accounts receivable to be more collectible immediately after the new system is implemented. Here, a historical default rate may serve as an upper bound when estimating a future default rate but may otherwise provide little predictive value. The seller's accountant must consider differences between current and prior collection procedures, and whether the additional efforts are directed at the hardest-to-collect accounts.

*Should One or Multiple Default Rates Be Used?*

After considering the issues mentioned above as well as materiality, the seller's accountant must then use judgment to decide whether the same default rate can be applied to all receivables. Alternatively, different groups of receivables might have collection patterns that are different enough to justify using multiple default rates. Receivables from customers in different countries or industries (as discussed above) might have different expected default rates. In addition, age may affect default rates if the seller finds it more difficult to collect older receivables (i.e. the "Aging of Accounts Receivable" method discussed previously). Finally, the seller may experience different default rates for sales of different products.

*Measuring Expected Net Collateral Recovery*

Many sellers (e.g. in the technology industry) allow their customers to finance purchases over time. This situation would be an installment sale for the seller and a loan for each customer, with the customer providing the product as collateral for the loan. If the customer defaults on the loan payments, the seller may repossess the collateral and re-sell it. The cash received net of costs incurred would be the "net collateral recovery" from this account. After computing an allowance balance using anticipated default rates as discussed above, the seller then reduces the balance by the dollar amount of the expected net collateral recovery as shown in the allowance model. Determining anticipated net collateral recovery requires predicting both the cash inflow from selling the collateral and the cash outflow from repossessing and selling the collateral.

*Cash inflow* will be determined by estimating the collateral's value as of the date of expected repossession. The collateral will have value only if there is a second-hand market for it and/or its components. Collateral value may vary widely over the period covered by a long-term financing agreement, especially in industries characterized by frequent product and technology improvements. For example, a computer's value declines significantly within six months of its original sale date. Collateral value estimates are also affected by how frequently similar collateral is damaged prior to repossession and the typical cost of damage. The accountant must also adjust expected cash inflow for the probability of repossession, and the probability will be low for either of two reasons: customers rarely default on their payments, or the collateral is difficult to repossess. Thus, calculating expected cash inflow requires significant judgment because the accountant must forecast

the probability of repossession, the date of expected repossession, and the value as of that date given the possibility of damage.

The seller's accountant must also estimate future *cash outflows* associated with collateral. The seller will likely incur costs to repossess the collateral; the cost of repossessing an automobile parked outside on a public street may be relatively low, while the cost of repossessing a large computer located on the premises of a private company may be high. After repossession, the seller may incur additional costs to upgrade the collateral to offset declines in value.

To summarize, the seller's accountant must exercise significant judgment when measuring default rates, when deciding whether one or multiple rates should be used, and when measuring expected net collateral recovery. The accountant must determine and consider all relevant and reliable information, and then apply judgment to reach reasonable conclusions, and must do this in a way that does not violate conservatism.

### **Allowance Calculations and Conservatism**

GAAP require accounts receivable to be reported net of an allowance for doubtful accounts so that conservatism is not violated. If the allowance balance is not subtracted from accounts receivable on the balance sheet, or if the allowance balance is too small, then the asset "net accounts receivable" would likely be overstated. Accountants must always consider conservatism when using judgment to compute the allowance balance. For example, a default rate that is "too low" or estimated collateral recovery that is "too high" will lead to an allowance balance that is "too low," a measure of net realizable value that is "too high" and, thus, an overstatement of assets and a violation of conservatism. Conservatism does not dictate that the accountant overstate the default rate and, thus, understate assets. However, it does suggest that an accountant who is choosing between two equally justifiable default rates should choose the rate that is least likely to overstate net accounts receivable while providing a net accounts receivable number that fairly presents reality.

### **Allowance Calculations and Earnings Management**

Other research has described the incentives executives have to manage their company's earnings and have documented the existence of earnings management. For example, Myers et al., (2007) finds that investors who own the stock of companies with long strings of earnings increases experience abnormal returns on their investments, returns which "provide managers with incentives to maintain and extend the strings" (p. 249). Corporate executives may be tempted to manage earnings because they want to please their company's investors, because they own company stock themselves, or because they will receive bonuses based on their company's reported earnings. Executives may also manage earnings to meet or beat analyst earnings forecasts; otherwise, the stock market may react negatively to the company's announced earnings. In addition, because investors reward a "smooth" and increasing earnings pattern over time, executives may want to increase earnings in some periods and decrease earnings in "good years," to move the earnings to future "bad years."

Because any entry that affects the allowance for doubtful accounts also affects bad debt expense, the application of judgment when estimating uncollectible receivables will inevitably affect reported net income. An accountant who wants to manage earnings could choose a target bad debt expense number and then argue that professional judgment justified that number. If the accountant

wants to *increase* reported earnings, s/he can use judgment to justify a lower allowance balance which would decrease bad debt expense and increase reported net income. For this reason, the allowance balance is often viewed as a “reserve.” However, companies that manage earnings face possible disciplinary action by the Securities and Exchange Commission (SEC). Eig (2001) states that a subsidiary of ConAgra Foods Inc. “accrued insufficient bad-debt reserves” and used other income-increasing accounting techniques in 2001. As a result, the SEC required ConAgra Foods Inc. to restate three years of financial results.

As mentioned above, some companies may want to *decrease* reported earnings in some periods as part of a “smoothing” earnings management strategy. Markoff (1999) discusses an SEC investigation of Microsoft. Markoff says that “the company may have reserved too much” and that Microsoft “sets aside non-public reserves for bad debts, returned products and other related business contingencies.” Roland (2002) quoted an SEC order that said “Microsoft overstated income in some quarters and understated it in others as a result of its inaccurately estimated reserves.” However, Microsoft agreed to settle all charges, was not fined, and neither admitted nor denied wrongdoing. Accountants must apply judgment with the intention of faithfully representing all uncollectible amounts. They must not violate conservatism and they must not allow economic consequences to influence the numbers they report.

### TEACHING NOTES

Teaching notes and course survey are available from the editor. Send a request from the “For Contributors” page of the journal website, <http://gpae.bryant.edu>.

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