Risk Based Allowance Calculations:  
Summary of GAAP Implications

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The following data provides the response and shows the consistency of the TCT methodology with current published guidelines.

**Introduction**  
The foundational document providing direction to the methodology is the tome of Generally Accepted Accounting Principles or GAAP. A summary of the codification topic related to loss calculation is listed below.

**Generally Accepted Accounting Principles (GAAP)**  
**Codification Topic 450-20**  
**Loss Contingencies**

What does the GAAP Code actually say
◆ Loss contingency  
--> a loss will incur if certain future events occur or not occur

◆ Recognition of a loss contingency  
1. Recognized in the financial statements  
2. Disclosed in the notes

◆ Recognized in the financial statements  
--> if both (A) and (B) are satisfied.  
(A) it is "probable" that a loss will incur  
(B) amount of loss can be reasonably estimated

◆ Disclosed in the notes, without recognition  
--> if it is "reasonably possible" that a loss will incur

◆ Disclosure is not required  
--> if the possibility of loss is "remote"

According to testimony before the U.S. House of Representatives, Subcommittee on Financial Institutions and Consumer Credit, Committee on Banking and Financial Services:  
“…GAAP does not provide a clear, fixed formula for establishing loan loss reserves. Bank management and accountants are supposed to exercise significant judgment and
discretion based on a loan loss reserve and a wide range of loan loss reserves would be permissible under GAAP.”

The two primary documents flowing from GAAP and FASB regarding Loan Loss Reserves are the Statement of Financial Accounting Standards No. 5 (Accounting for Contingencies) and Statement of Financial Accounting Standards No. 114 (Accounting by Creditors for Impairment of a Loan).

Paragraph 8 of Standard No. 5 states that “An estimated loss from contingency … shall be accrued by a charge to income if both of the following conditions are met:

a. Information available prior to issuance of the financial statements indicates that an assets has been impaired…
b. The amount of loss can be reasonably estimated.”

In clarification of this statement the Office of the Comptroller of the Currency in the Allowance for Loan Loss Comptrollers Guidance states that financial institutions may “…provide for such credits as part of a pool of similar loans, using historical loss experience for such loans, adjusted for current conditions.” This adjustment is commonly referred to as the Environmental Factor.

The handbook lists variables that are considered acceptable and appropriate to use in adjusting the historical loss review. These variables include: delinquency, migration of credit scores, bankruptcy, decline in the local economy, unemployment or death.

The handbook also explains that “…because no single approach has been determined to be the best, or appropriate for all banks the OCC does not require that banks use a specific method to determine historical loss experience.

In principle, the goal of any allowance methodology that applies historical loss experience to a current pool of loans should be to provide for unconfirmed losses that probably exist as of the evaluation date. How that is accomplished, include the analysis of time frames used, will depend upon the characteristics of the pool and the particular methodology.”

Migration analysis is also discussed in the OCC Policy Statements as an advanced application to increase the sophistication of the pool approach to historical loan loss.

The final statement, of this section, states that pools of loans that have been identified as impaired should be removed from the pools for historical loss calculation and analyzed using the FAS 114 approach.
Limitation and Focus of Allowance Calculation
GAAP identifies specific foci and limits for the calculation of the allowance account. Two key elements that direct the analysis of the appropriate allowance is the probability of loss are the ability to show that the loss is probable and to quantify the loss as well. As quoted from the reference materials:
“For purposes of this policy statement, the term “estimated credit losses” means an estimate of the current amount of loans that it is probable the institution will be unable to collect given facts and circumstances as of the evaluation date.”

As well the directives from GAAP establish limitations on what is to be included in allowance calculations. To wit:

“It is implicit in these conditions that it must be probable that one or more future events will occur confirming the fact of the loss. Thus, under GAAP, the purpose of the ALLL is not to absorb all of the risk in the loan portfolio, but to cover probable credit losses that have already been incurred.”

The CostPro Risk Based Allowance methodology is consistent with all aspects of the FAS 5 directions flowing from GAAP.

Consistent with the FAS 5 guidelines under GAAP, the following steps are used to calculate FAS-5 loan loss provision:
1. All loan are partitioned into common groups or pools by loan type or collateral code
2. All loans within each group or pool are further divided into risk grades using the most recent credit score.
3. A historical report of average balances in each pool and each grade within each pool is maintained for a rolling 12 month period.
4. A historical report of all charged off loans by pool and by risk grade within each pool is maintained for a rolling 12 month period.
5. The 12 month total of charged off loans for each grade within each pool is then divided by the average balance for each grade within each pool to arrive at a loss factor for each grade within each pool of loans.
6. Twice each year the credit union will acquire updated FICO scores for all loans with outstanding balances.
7. Within each loan pool the current balances of loans in each risk grade are then multiplied by the corresponding loss factor for each grade to identify the amount of required provision for each risk grade.
8. Provisions for each risk grade and then totaled to arrive at the total provision for each loan pool
9. Total provisions for each loan pool are then added to arrive at the pre-environmental FAS-5 provision needed.
Environmental Factor
The next step in the provision process is to calculate and apply the environmental factor. This factor is intended to adjust the provision in anticipation of factors that may increase or decrease the historical provision inherent in the FAS-5 calculation.

Discussion and Descriptions
This environmental factor combines three distinct, but interrelated, measures to arrive at an appropriate adjustment percentage. The three measures are: (1) net change in the risk profile of the loan portfolio, (2) loan delinquencies, and (3) the APP Economic Stress indicator. The inter-relationship of these measures merits a discussion of their interaction.

**Measure 1 – Net Risk Change in the Loan Portfolio.** Anticipated loan losses are a function of the total risk in the loan portfolio. Since lower risk grade loans are more susceptible to loss, the higher the concentration of lower risk grade loans, the higher the likelihood of losses. Conversely, the higher the concentration of loans in higher risk grades, the lower the likelihood of losses. To quantify the risk profile over time the credit union monitors the FICO scores of its borrowers, which allows it to track if the scores are increasing, maintaining or decreasing from the time the loan was made. The net change in the risk profile becomes an important predictor of charge-offs over the subsequent months.

To calculate the Net Credit Change a matrix is prepared that compares the current FICO scores to the original scores in order to identify the dollar balances that are impaired (dropped two or more credit grades or dropped to D or lower). The comparison also identifies those balances that have improved, (risen one grade or higher). The net change is identified by calculating the difference between the impaired and the improved. The net credit change indicates the amount of changed risk in the loan portfolio. A negative score indicates that the risk profile is increasing while a positive score indicates a lowering risk profile in the portfolio.

**Measure 2 – Loan Delinquencies.** Loan losses are usually preceded by delinquencies. Higher delinquencies are a predictor of upcoming losses. The higher the delinquency rate the higher the likely amount of upcoming charge-offs. Linking back to Measure 1, as the net risk level in the portfolio increases the likelihood of delinquencies increases as well.
Measure 3 – “AP” Economic Stress Score. This is an external measure available on the web that identifies the changing nature of the economy in the market served. The authors of this tool combine rates of unemployment, bankruptcies, and foreclosures to calculate an indicator that is unique for each county in the United States to create a comparable score. This ESS score influences both Measures 1 and 2 and helps predict upcoming changes in both Measures.

Application and Calculation for FAS 5
The Environmental Factor Worksheet contains rating scales for each of the three measures. The ranges are calculated using Regression analysis (or r-squared) to measure and validate the predictive quality of each variable in the factor and MANOVA to determine the total variance that should be applied to each score. Each of these variables is analyzed based on actual performance in the credit union’s market area.

Once the scores are identified they are placed in the appropriate range for each Measure. The corresponding percent is then entered in the calculation table. The three percentages are then totaled to derive the percent of environmental adjustment (EF) to apply to the FAS-5 calculation. The EF percent is multiplied times the FAS-5 total and the resulting dollar amount is then added to the FAS-5 total.

Please note that the variables employed in the factor are consistent with guidance provided not only by the OCC Handbook but also by NCUA in its ALLL Webinar broadcast earlier this year.

Application of FAS 114 to the ALLL Methodology
This section of GAAP addresses the handling of loans that have been individually identified as probable or likely losses. In the migration process, loans that have been identified as having impaired credit scores are individually examined for potential loss. The OCC Handbook says that: “…the most common indicator of loss … is delinquency.” Consistent with this suggestion, loans identified as impaired and as delinquent are examined for potential loss (most commonly resulting from collateral that has less value than the balance of the loan). A percentage of the underwater amount is then added to the FAS 114 calculation to account for the contingent loss potential.
References

1. Transcript of Testimony before the U.S. House of Representatives, Subcommittee on Financial Institutions and Consumer Credit, Committee on Banking and Financial Services: June 16, 1999.
2. Statement of Financial Accounting Standards No. 5 (Accounting for Contingencies) 1999