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# CECL – Ready or Not Here it Comes

- **Estimated 44% Increase in "Day 1" CECL Reserves of $42 billion:** applies to 295 large SEC filers adopting CECL in Q1 2020 (2020 Adopters) representing about 76% of total U.S. loans; tax-effected charge netted against retained earnings and phased-in over 3 years
- **Smaller But More Variable "Day 2" CECL Reserve Charge:** tied to quarterly changes in NCOs, loan growth, and economic conditions; charge to the income statement and retained without phase-in period
- **Potential Limits to and/or Repricing of Credit Availability for Certain Loan Types:** longer duration and higher risk loans attract much higher CECL reserves potentially repricing or rationing availability of such loans
- **Two CECL M&A Penalties May Impact Activity:** double counting of reserves for non-PCD loans will encourage more loans to be classified as PCD assets; disallowance of seller transitional capital and reserve amounts will impact pro forma regulatory capital calculations
- **Challenges to Comparability of Financial Information:** will place a premium on quality of disclosure with vastly different requirements for 2020 Adopters vs 2023 Adopters, PCD vs non-PCD assets, and ACL vs AACL reserves; much management time and attention must also be focused on SAB 74 and SEC disclosure requirements for reserve methodology and explaining differences between historical loss rates, current NCOs, and the forecast period
- **Procyclical Nature of Forward Looking CECL Reserves:** may exacerbate recovery from the next recession as expected higher losses during a recessionary period may double count losses already embedded in the historical through-the-cycle loss rates; reductions to tangible equity from CECL charges limit future lending capacity

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Effective January 1, 2020, large SEC filing financial institutions (2020 Adopters) are required to adopt the new accounting standard, Accounting Standards Codification (ASC 326) commonly referred to as Current Expected Credit Losses or CECL. This new accounting standard will apply to December 31, 2019 loan balances to be reported in March 31, 2020 financial statements. While there has been vigorous debate on the merits of CECL vs. other future loan loss methodologies over the past several years, the reality of CECL is here with pre-announcements of the required "Day 1" reserves beginning to roll in. This information along with the "Day 2" reserve disclosure expected in April and May will potentially impact bank stock valuations, loan loss reserves, GAAP and regulatory capital levels, and the cost and availability of credit to consumers and for loans with longer maturities.

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*This is the latest in a series of reports[1] on the evolving regulatory, legislative and accounting environment for the banking industry.*

[1] For related Piper Sandler reports please see: Changes to Small BHC Policy Statement dated April 20, 2015, Liquidity Rules Now the Binding Constraint for Large Banks dated July 6, 2016, Simplification of Basel III Capital Rules dated October 10, 2017, The Pendulum Swings dated March 20, 2018, Bank Regulation Resizing dated May 29, 2018, Regulatory Simplification / Accounting Complication dated January 7, 2019, Basel III Simplification Finalized as Expected dated June 18, 2019, and 9th Inning Clean Up dated October 7, 2019, http://www.pipersandler.com/2col.aspx?id=5874

So ready or not here CECL comes -- and lenders, equity and debt investors, analysts, lawyers, regulators, rating agencies, and borrowers, among others must prepare for the impact. To facilitate this preparation, we have summarized background on the development of CECL; provided a detailed description of the requirements and methodology; and highlighted disclosure requirements, preliminary results from pre-announcements, and key issues to be considered by all constituencies.

# BACKGROUND

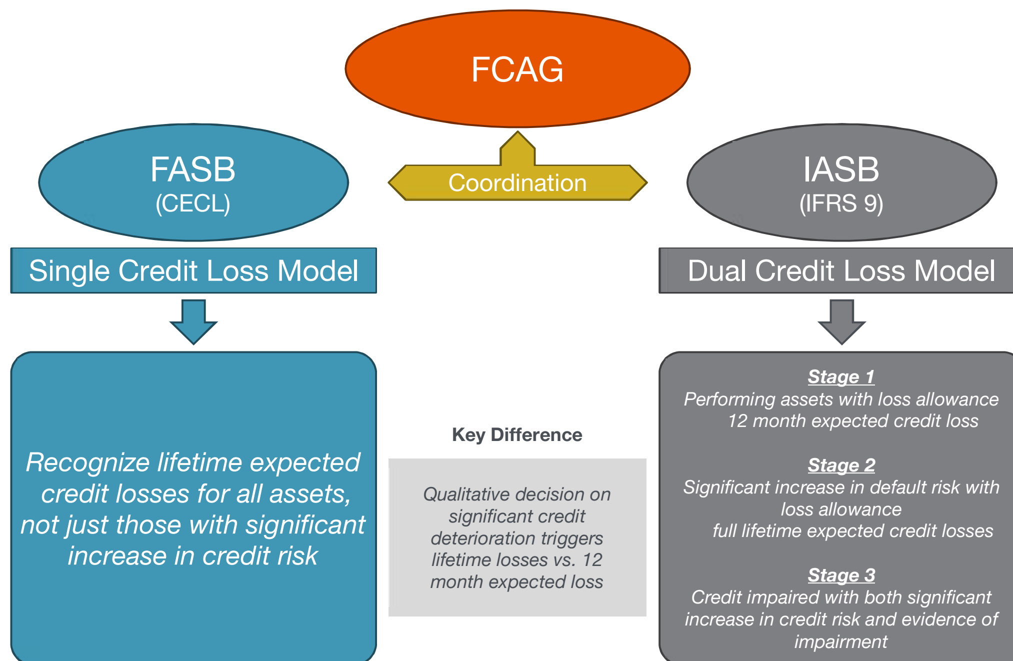
The financial crisis of 2007-2009 was by all accounts the most significant economic downturn experienced in the U.S. since the Great Depression. In response, the U.S. Congress passed the Dodd-Frank Act (2010), domestic and international regulatory agencies developed the Basel III capital rules (2012), and FASB and the IASB formed the Financial Crisis Advisory Group (FCAG) in 2009 to coordinate globally improvements in financial reporting. Over time, lawmakers and regulators identified excesses of the DFA and Basel III and provided regulatory relief through the 2018 Economic Growth, Regulatory Relief and Consumer Protection Act (EGRRCPA) legislation and 2019 Basel III Simplification. The accounting response to the financial crisis arrived in the form of ASC 842 accounting for leases and ASC 326 for current expected credit losses (CECL), but did not become effective until 2019 and 2020, respectively. As shown below in Chart A, the accounting response to the financial crisis arrived very late in the timeline of recovery. CECL was designed to provide a forward-looking reserve methodology that addresses problems with the current "probable" threshold and "incurred loss" method of determining reserves.

## Chart A – Timeline of the Financial Crisis and Response

| *CRISIS* | | *REGULATORY AND LEGISLATIVE RESPONSE TO CRISIS* | | | | | | | *RESPONSE TO RESPONSE* | | | *ACCOUNTING RESPONSE TO CRISIS* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Financial Crisis** | | **Basel III<br>Dodd Frank Act** | | | | | | | **U.S. Treasury Reports<br>Fed's Basel III Simplification<br>EGRRCPA** | | | **Lease Accounting** | **Reserves for Future Losses** | | | |
| **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** |
| | | | DFA | | Basel III | | | | U.S. Election | U.S. Treasury Core Prinicpals Report<br>Basel III Simplification | Economic Growth Regulatory Relief and Consumer Protection Act or EGRRCPA (S.2155) | ASC 842 for PBEs | CECL (ASC 326) For SEC Filers | ASC 842 for Private and non-profits | | CECL For SRCs EGCs, and All Others |

The Financial Crisis Advisory Group (FCAG) coordinated the implementation of improvements in financial reporting but ultimately FASB and the IASB could not agree on a single framework. As illustrated below in Chart B, the IASB implemented a dual credit loss model (IFRS 9) in 2018 with recognition of credit losses at three stages while FASB favored CECL which represented a single credit loss model to recognize expected lifetime credit losses, not just those with a significant increase in credit risk. The key difference between the two methodologies is the qualitative decision to move from Stage 1 (with performing assets assessed a 12-month loss reserve) to Stage 2 (following a significant deterioration in default risk and an assessment of full lifetime expected credit losses). These are significant differences that will complicate comparisons of credit quality and capital strength across jurisdictions and perhaps leave U.S. banking institutions with a competitive disadvantage relative to international banks.

## Chart B – FASB vs IASB




U.S. bank examiners understood that improvements were needed to the current "probable" threshold and "incurred loss method" accounting rules that resulted in allowances that were "too little, too late." So even though FASB and the IASB could not agree on a single framework and however imperfect CECL may be, the U.S. banking regulators felt that they had to work through its implementation before making revisions.

FASB never completed a quantitative impact study on the potential results of adopting CECL, and Congress applied intense pressure in October 2019 to delay implementation pending such a study.

Key quantitative impact study areas of concern included:

- Availability of credit for consumers and small businesses,
- Depletion of regulatory capital for lending during a recession,
- Risk of reduced regulatory capital delaying recovery from recession,
- Systemic risk to the U.S. economy,
- Disproportionate impact of CECL on financial institutions of various sizes and complexities with varying resources,
- Impact of CECL on decisions by investors, and
- Potential competitive impact of CECL in the U.S. vs IFRS 9 applicable to international institutions

While it made no changes to CECL, FASB did agree to delay in October 2019, the adoption of CECL until January 1, 2023 for smaller reporting companies (SRCs), emerging growth companies (EGCs), and other non-SEC filers. This delay did not address the call for a quantitative impact study. In December 2019, Congress remedied this with a requirement in the 2020 Budget Bill that directed the U.S. Treasury in consultation with the Fed, FDIC, OCC and the NCUA to study the need, if any, for changes to regulatory capital requirements necessitated by CECL and report the results within 270 days. While this quantitative impact study is much more limited in scope and did not cover many of the concerns originally identified by Congress, it is a start and indicates a growing awareness that the implementation of CECL could have a negative impact on the economy and availability of credit particularly during a recessionary period. This potential procyclicality of CECL will likely be a source of continuing debate and expect to see more pressure from Congress if there is a negative impact of CECL on the U.S. economy over the next several years.

# CECL Requirements and Methodology

With that background on the evolution of CECL, let's now examine the requirements, methodology for implementation, "Day 1" vs "Day 2" impact, timing for adoption, preliminary reserve analysis, strategic alternatives to address CECL, and M&A considerations.

CECL requires the measurement of all expected credit losses for amortized cost assets held on the reporting date based on historical experience, current conditions and reasonable and supportable (RNS) forecasts. The overall objective is to present an entity's estimate of the net amount expected to be collected on financial assets. CECL replaces Purchased Credit-Impaired assets (PCI) with **Purchased Credit Deteriorated assets (PCD)** and modifies the treatment for credit losses on Available-For-sale (AFS) debt securities.

CECL also introduces two new terms to describe credit loan loss reserves. The **Allowance for Credit Losses (ACL)** applies to both financial assets and AFS debt securities. Upon adoption of CECL, the "Day 1" difference between the amount of credit loss allowance required under the incurred loss methodology and the amount of credit loss allowance required under the CECL methodology are recognized in the period of adoption for GAAP purposes but may be phased-in over three years for regulatory capital and accounting purposes. The **Adjusted Allowance for Credit Losses (AACL)** is the regulatory term used for regulatory capital purposes and applies to "Day 2" charges for credit loss allowances excluding PCD assets and AFS debt securities. AACL only includes those allowances that have been charged against earnings or retained earnings. AACL amounts are eligible for inclusion in tier 2 capital for up to 1.25% of risk-weighted assets (standardized approach). Periodic third-party validation of CECL reserve methodology is required either by independent internal groups or external third parties.

CECL applies to all financial assets carried at amortized cost including:

- Loans held for investment (HFI)
- Held-to-maturity (HTM) debt securities
- Trade receivables
- Lease receivables recognized by a lessor (excluding operating leases)
- Reinsurance receivables
- Off-balance sheet credit exposures not accounted for as insurance or derivatives, including loan commitments, standby LOCs, and financial guarantees

CECL does not apply to:

- Trading account assets
- Loans and securities available for sale
- Financial assets carried at fair value
- Loans and receivables under common control

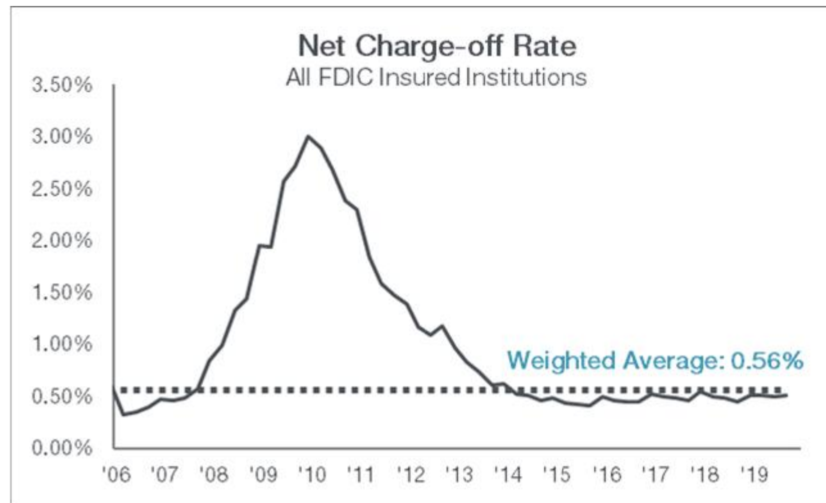
Four key considerations drive the CECL reserve amount:

- Through the Cycle (TTC) Net Charge Off Rate (NCO)%: measurement of the weighted average NCO rate through the last economic cycle but may exclude loan types that are no longer offered
- Weighted Average Remaining Loan Life: calculation of the weighted average remaining maturity of loans segregated by loans with similar characteristics
- Reasonable and Supportable Assumptions (RNS) related to six internal and three external "Q" factors
- Selection among five credit loss methods including loss rate, vintage year, PD×LGD, roll rate and discounted cash flow

With the industry average loan life of 3.23 years and the weighted average net charge-off rate (NCO) of .56%, the industry average CECL reserve approximates 1.82% (.56% × 3.23) as shown below in Chart C:

## Chart C – Calculation of CECL ACL Reserve Amount

| As of 3Q 2019 | Amounts in Millions of USD | | Since 1984 | | |
|---|---|---|---|---|---|
| Loan Category | Average Life (Yrs) | EOP Balances | Long Term NCO Rate (%) | Est. Losses (%) | Est. Losses ($) |
| Mortgage (Closed-End First Lien 1-4 Family Residential Mortgages) | 6.25 | 2,139,430 | 0.38 % | 2.36 % | 50,528 |
| Mortgage (Closed-End Second Lien 1-4 Family Residential Mortgages) | 5.75 | 42,878 | 1.59 % | 9.13 % | 3,913 |
| Multi-Family Loans | 6.25 | 451,968 | 0.28 % | 1.72 % | 7,789 |
| Commercial & Industrial Loans | 1.50 | 2,215,838 | 0.87 % | 1.31 % | 29,045 |
| CRE (Real Estate Loans Secured by Nonfarm Nonresidential Properties | 3.00 | 1,491,704 | 0.30 % | 0.89 % | 13,213 |
| Consumer Loans (Credit Cards) | 0.75 | 892,881 | 4.35 % | 3.26 % | 29,143 |
| Consumer Loans (Other Loans to Individuals) | 1.45 | 886,450 | 1.09 % | 1.58 % | 13,966 |
| | | | Wt. Avg: 0.56 % | | |
| Subtotal | 3.23 | 8,121,149 | | CECL Reserves | 147,596 |
| Total Loans & Leases | | 10,401,484 | | CECL Reserve/Loans | 1.82 % |
| | | | | Implied Industry Reserves | 189,040 |




*Source: FDIC, Piper Sandler & Co.*

The 61 bps increase in total reserves to 1.82% of loans against average loans of $10,401 billion would result in a $63.9 billion increase in reserves (after giving effect to an assumed tax rate of 21%). This would reduce tangible equity from $1,707.2 billion to $1,656.7 billion and TE/TA would decline about 25 bps to 9.19%. Please see Chart D below for more details.

## Chart D – Impact of CECL of TE/TA and Reserves

| As of 3Q 2019 | | | Amounts in Millions of USD |
|---|---|---|---|
| **Assumptions** | | | |
| Weighted Average NCO Rate | 0.56% (a) | | |
| Weighted Average Life of Loans | 3.2 yrs (b) | | |
| Expected Losses on Average Loans | 1.82% (a x b) | | |
| **Change in Reserves under CECL** | **Current** | **Pro Forma** | **Change** |
| Total Average Loans | $ 10,401,484 | $ 10,401,484 | |
| Total Reserves | $ 125,156 | $ 189,040 | $ 63,884 |
| | | Assumed Tax Rate | 21% |
| | | After Tax Impact to Equity and Assets | $ 50,468 |
| **Pro Forma Ratios under CECL** | **Current** | **Pro Forma** | **Impact** |
| Tangible Equity | $ 1,707,204 | $ 1,656,736 | |
| Tangible Assets | $ 18,086,397 | $ 18,035,929 | |
| Tangible Equity/ Tangible Assets | 9.44% | 9.19% | (25) bps |
| Reserves/ Loans | 1.20% | 1.82% | 61 bps |

*Source: FDIC, Piper Sandler & Co.*

*Note: Bank level data*

But the through-the-cycle NCO rate is strongly influenced by internal and external "Q" factors that support reasonable and supportable changes to historic NCO rates. We have summarized the key internal and external factors below in Charts E and F.

## Chart E – Internal "Q" Factors

| Internal Q Factors | | Examples |
|---|---|---|
| 1. Lending Policies and Procedures | | Changes in underwriting standards and collections, charge offs, and recovery practices |
| 2. Nature and volume of the portfolio and terms of the loans | | Loan growth, maturity analysis, vintage analysis, pricing vs. benchmarks, new products |
| 3. Experience, depth, and ability of the lending management | | Change in experienced staff, number of new positions |
| 4. Volume and severity of past due loans and adversely graded loans | | NPA and nonaccrual loans % total loans, change in segment past dues and TDRs |
| 5. Quality of loan review system | | Exception rates form loan review reports, grade variances, frequency or review |
| 6. Loan Concentrations | | Loan portfolio segment concentration, % of capital; segments over limits |

## Chart F – External "Q" Factors

| External | Q Factors | | Examples |
|---|---|---|---|
| | 1. Value of underlying collateral for collateral dependent loans | → | Changes in underwriting standards and collections, charge offs, and recovery practices |
| | 2. International, national, regional and local conditions | → | National and regional unemployment rates, GDP rates, industry and other economic data |
| | 3. Impact of other external factors on level of estimated credit losses (regulatory and legal requirements, competition, etc.) | → | Changes in regulation, litigation, regulatory enforcement actions, technology, new competitors, etc. |

Overall, management is expected to use these Q factors with RNS commentary to adjust historic TTC loan segment loss rates applicable for the forecast period

In addition to the NCO rate, the weighted average loan life and the Q factors, the selection of loss estimation methodologies by loan type is the fourth major factor driving the calculation of the CECL reserve amount. U.S. banking institutions can select among at least five loss estimation methodologies based on the characteristics of each loan segment. As shown below these include:

- Loss Rate or Weighted Average Remaining Maturity (WARM): Based on the lifetime loss rate per static pool. Calculate the average lifetime loss rate for all static pools. Incorporates management's view of how the forward-looking environment will differ from historical results using Q –factors.

- Vintage Year Loss Rate: Based on loss rates by origination date includes data on loan amounts, loan charge-offs and recoveries by date. Using this information, vintage tables are created to evaluate loss rate patterns and develop estimated losses by vintage year. This approach can help support qualitative factors used by management to support assumptions used in loss estimate.

- PD×LGD: Based on the lifetime PD and LGD rates for each static pool. Apply those default rates and loss given default rates along with management's Q-factors to calculate the expected loss rate by segment based on the credit mix of the current portfolio.

- Roll Rate: Based on expected loan roll rates, expected LGD, contractual loan terms, and loan delinquency or risk grade at the reporting date. Roll rates measured as the frequency with which loans transition from one delinquency status to another or from one risk grade to another. Roll rates adjusted by management to reflect macro and other factors such as prepayments. Roll rates can be used in a cash flow model to generate expected charge-offs of amortized cost.

- Discounted Cash Flow: Based on a loan by loan projection of the cash flows over the life of each loan. Most accurate measure and likely to result in lowest CECL allowance but require historical and projected data (and possibly specialized software) for:
  - maturity date or remaining term to maturity,
  - payment amount,
  - interest rate,
  - prepayment speed,
  - constant default rate (PD - probability of default),
  - loss given default (LGD - loss given default),
  - recovery delay (time between loss confirmation and expected recovery),
  - discount rate (generally the effective yield on the loan)

Among these choices, the PD×LGD, Roll Rate and Discounted Cash Flow methods will likely result in lower overall levels of estimated loan losses. However, the high level of historical loan level information required to deploy these methodologies may initially limit application to larger banks that have previously gathered this data for stress testing and other risk management practices.

There is a significant difference between the “Day 1” and “Day 2” reserve amount. The “Day 1” reserve amount is recognized in the quarter of CECL adoption and based on the weighted average loan balance at the prior quarter end × the TTC annual charge-off rate × the remaining contractual portfolio life plus any “Q” factor adjustments for the forecast period. The “Day 2” reserve amount covers any NCO activity during the quarter, CECL reserves against any net loan growth, and any Q factor adjustments since the last quarter.

To illustrate these differences, we have provided a “Day 1” example below in Chart G where a bank has a 1% reserve on a $10,000 loan portfolio. With the implementation of CECL, the required reserve amount increases to 1.60% based on the .40% through-the-cycle NCO rate × 3.5 weighted average years for the loan portfolio plus .20% for Q factor adjustment for the forecast period.

## Chart G – “Day 1” CECL ACL Reserve Amount

| | (A) | | | (B) | | (C) | | (D) | | (E) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 Year End Segment Amortized Cost Loan Balances | | | Loan Segment Through the Cycle (TTC) Annual Charge-off Rate | | Remaining Contractual Portfolio Life | | "Q" Factor Adjustment for the Forecast Period | | "Day 1" CECL Reserve Amount |
| | ($) | | | (%) | | Years | | (%) | | ($) |
| Day 1 Example | **A** | **x** | **[(** | **B** | **x** | **C** | **) +** | **D** | **] =** | **E** |
| | $10,000 | x | [( | 0.40% | x | 3.5 | ) + | 0.20% | ] = | $160 |

The required reserves increase from $100 to $160 with an after-tax reduction to GAAP retained earnings of $47 representing a 3.41% reduction to GAAP retained earnings. This charge may be phased-in over three years for regulatory accounting purposes.

| Change in Reserves Under CECL | Current | Pro Forma | Change |
|---|---|---|---|
| Total Average Loans | $ 10,000 | $ 10,000 | |
| Total Reserves | $ 100 | $ 160 | $ 60 |
| | | Assumed Tax Rate | 21% |
| | | ATX Impact | $ 47 |

**$47mm ATX charges against TE**
**but phased-in over 3 years for RAP**

| | Current | Pro Forma | % Change |
|---|---|---|---|
| Tangible Equity | $ 1,250 | $ 1,203 | |
| Tangible Assets | $ 12,000 | $ 11,953 | |
| Tangible Equity/ Tangible Assets | 10.42% | 10.06% | -3.41% |
| Reserves/ Loans | 1.00% | 1.60% | 60.00% |

**3.41% decline in TE/TA**
**60% increase in reserves**

Alternatively, as shown below in Chart H, the “Day 2” required reserve amount includes the provision to cover $10 of NCOs during the quarter, plus the CECL reserve amount needed to cover any incremental loan growth after giving effect to the NCO during the period. This results in $164 of reserves against average loans of $10,240 or 1.60%.

# Chart H – “Day 2” CECL AACL Reserve Amount

| | (E) | | (F) | | (G) | | (H) |
|---|---|---|---|---|---|---|---|
| | "Day 1" CECL Reserve Amount | | Less Q1 Loan Losses | | Q1 Net Loan Growth × CECL Reserve % | | "Day 2" CECL Reserve Amount |
| | ($) | | ($) | | ($) | | ($) |
| Day 2 Example | E | - | F | + | G | = | H |
| | $160 | - | $10 | + | $14 | = | $164 |

In this example, the bank is growing its loan portfolio by 10% per year -- $250 or 2.5% per quarter. The bank had a $10 NCO in Q1 and had to expense $14 in before tax provision or $11 after tax to reach $164 of reserves relative to $10,240 in loans. This maintains the bank’s CECL reserve ratio at 1.60% but with a slight reduction in tangible equity/tangible assets of .82% and reserve increase of 6.67%.

| "Day 2" (End of Q1) CECL Reserves | |
|---|---|
| **Assumptions** | |
| Starting Loan Balance | $ 10,000 |
| Q1 NCO | 10 |
| Annualized Net Loan Growth | 10% |
| Required CECL Reserves | 1.60% |
| | |
| **Balances** | |
| Starting Loan Balances | $ 10,000 |
| Q1 Loan Growth | $ 250 |
| Q1 NCO | $ (10) |
| Q1 Ending Average Loan Balances | $ 10,240 |
| | |
| Day 1 CECL Required Reserves | $ 160 |
| Q1 NCO | $ (10) |
| Ending Reserves Before Loan Growth | $ 150 |
| Additional Provisioning for Loan Growth | $ 14 |
| Day 2 Required CECL Reserves | $ 164 |

| Change in Reserves Under CECL | Current | Pro Forma | Change |
|---|---|---|---|
| Total Average Loans | $ 10,000 | $ 10,240 | $ 240 |
| Total Reserves | $ 150 | $ 164 | $ 14 |
| | | Assumed Tax Rate | 21% |
| | | ATX Impact | $ 11 |

$14 BTX provision expense through GAAP income statement with $11 ATX effect.

| | Current | Pro Forma | % Change |
|---|---|---|---|
| Tangible Equity | $ 1,203 | $ 1,192 | |
| Tangible Assets | $ 11,953 | $ 11,942 | |
| Tangible Equity/ Tangible Assets | 10.06% | 9.98% | -0.82% |
| Reserves/ Loans | 1.50% | 1.60% | 6.67% |

0.82% decline in TE/TA
6.67% increase in reserves after NCOs and reserves to cover loan growth

The “Day 2” provision for the CECL reserve increase flows through the income statement as a GAAP charge that cannot be phased-in over three years. As such, bank management teams, investors, regulators and other constituencies will be increasingly focused on the ongoing “Day 2” CECL reserve builds to cover net charge offs and support loan growth.

As shown below in Chart I, large banks that are SEC filers are required to adopt CECL effective January 1, 2020, but FASB pushed back the CECL adoption date for smaller companies until January 1, 2023. Smaller companies include Smaller Reporting Companies (SRCs), Emerging Growth Companies (EGCs) under the JOBS Act subject to confirmation by the SEC, Public Business Entities (PBEs) that are non-SEC filers, and nonpublic entities. SRCs companies are defined by the SEC as registrants with a public float[2] of less than $250 million (primary qualification) or registrants with annual revenues[3] of less than $100 million and either no public float or public float of less than $700 million (secondary qualification).

## Chart I – CECL Adoption Schedule

| Type of Firm | U.S. GAAP Effective Dates | Effective Dates for Regulatory Filing |
|---|---|---|
| Early Application | FY beginning after 12/15/18 including interim periods within those fiscal years | Permitted after 12/15/18 |
| Public Business Entities (PBEs) that are SEC Filers | FY beginning after 12/15/19 including interim periods within those fiscal years | 3/31/2020 |
| **Smaller Reporting Companies (SRCs) Emerging Growth Companies and PBEs that are Non-SEC Filers** | **FY beginning after 12/15/22 including interim periods within those fiscal years** | **3/31/2023** |
| **Nonpublic entities** | **FY beginning after 12/15/22 including interim periods within those fiscal years** | **3/31/2023** |

PBEs are business entities that are entities that meet one of three criteria: required to file financial information with the SEC, other regulatory groups, or foreign regulatory agencies; have issued securities that are traded, listed, or quoted on an exchange or OTC market; or have issued securities not subject to transfer restrictions and are required to prepare U.S. GAAP financial statements.

As of Q3 2019, we estimate that 228 public banking institutions qualify as SRCs. Of this number, 54 are nearing thresholds that would disqualify them for exemption from adopting CECL in 2020. As shown below in Chart J, 25 SRCs are nearing public float thresholds and 29 are nearing total revenue thresholds. While SRCs theoretically have until January 1, 2023 to adopt CECL, those approaching the public float or total revenues thresholds should be prepared for CECL and factor these thresholds into their M&A and growth plans.

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[2] Public float is computed by multiplying the aggregate number of shares of voting and non-voting common equity held by non-affiliates by the price at which the common equity was last sold. Federal Register/Vol. 83, No 132/Tuesday, July 10, 2018/Rules and Regulations. Page 31994.

[3] Annual revenues are as of the most recently completed fiscal year for which audited statements are available. For banking institutions, total revenues are equal to net interest income plus non-interest income. Federal Register/Vol. 83, No 132/Tuesday, July 10, 2018/Rules and Regulations. Page 31994.

## Chart J – SRCs Nearing Thresholds to Trigger Early Adoption of CECL

### PUBLIC FLOAT THRESHOLD (GREY) OR TOTAL REVENUE THRESHOLD (BLUE)

| | Institution Name | Ticker | Exchange | Public Float (%) | Market Cap ($MM) | Total Revenues ($MM) | Public Float ($MM) | Public Float Capacity ($MM) | Revenue Capacity ($MM) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | First Capital, Inc. | FCAP | NASDAQ | 95.5 | 210.3 | 33.3 | 200.8 | 49.2 | - |
| 2 | MVB Financial Corp. | MVBF | NASDAQ | 78.3 | 261.0 | 90.7 | 204.4 | 45.6 | - |
| 3 | Bank of Commerce Holdings | BOCH | NASDAQ | 94.1 | 218.0 | 51.5 | 205.1 | 44.9 | - |
| 4 | Timberland Bancorp, Inc. | TSBK | NASDAQ | 87.3 | 240.3 | 51.6 | 209.7 | 40.3 | - |
| 5 | Shore Bancshares, Inc. | SHBI | NASDAQ | 97.9 | 216.5 | 59.6 | 211.9 | 38.1 | - |
| 6 | Western New England Bancorp, Inc. | WNEB | NASDAQ | 81.8 | 259.4 | 68.5 | 212.3 | 37.7 | - |
| 7 | Norwood Financial Corp. | NWFL | NASDAQ | 93.6 | 227.1 | 43.7 | 212.7 | 37.3 | - |
| 8 | ChoiceOne Financial Services, Inc. | COFS | OTC Pink | 91.4 | 233.7 | 28.9 | 213.5 | 36.5 | - |
| 9 | Mid Penn Bancorp, Inc. | MPB | NASDAQ | 91.9 | 233.1 | 62.7 | 214.1 | 35.9 | - |
| 10 | Investar Holding Corporation | ISTR | NASDAQ | 86.4 | 250.3 | 61.7 | 216.2 | 33.8 | - |
| 11 | Parke Bancorp, Inc. | PKBK | NASDAQ | 83.1 | 260.3 | 52.2 | 216.4 | 33.6 | - |
| 12 | CapStar Financial Holdings, Inc. | CSTR | NASDAQ | 68.8 | 314.7 | 67.2 | 216.6 | 33.4 | - |
| 13 | Territorial Bancorp Inc. | TBNK | NASDAQ | 74.5 | 294.3 | 62.9 | 219.3 | 30.7 | - |
| 14 | Reliant Bancorp, Inc. | RBNC | NASDAQ | 89.2 | 246.9 | 63.2 | 220.1 | 29.9 | - |
| 15 | LCNB Corp. | LCNB | NASDAQ | 88.2 | 249.9 | 59.2 | 220.4 | 29.6 | - |
| 16 | Premier Financial Bancorp, Inc. | PFBI | NASDAQ | 81.1 | 273.7 | 68.9 | 221.8 | 28.2 | - |
| 17 | Provident Bancorp, Inc. | PVBC | NASDAQ | 94.5 | 235.6 | 41.3 | 222.6 | 27.4 | - |
| 18 | First Choice Bancorp | FCBP | NASDAQ | 79.2 | 285.0 | 59.3 | 225.8 | 24.2 | - |
| 19 | Penns Woods Bancorp, Inc. | PWOD | NASDAQ | 96.4 | 236.3 | 57.3 | 227.9 | 22.1 | - |
| 20 | Orrstown Financial Services, Inc. | ORRF | NASDAQ | 90.8 | 253.3 | 72.9 | 230.0 | 20.0 | - |
| 21 | Central Valley Community Bancorp | CVCY | NASDAQ | 84.3 | 283.8 | 72.5 | 239.3 | 10.7 | - |
| 22 | ACNB Corporation | ACNB | NASDAQ | 95.7 | 254.8 | 73.0 | 243.7 | 6.3 | - |
| 23 | Southern Missouri Bancorp, Inc. | SMBC | NASDAQ | 69.9 | 348.7 | 76.2 | 243.8 | 6.2 | - |
| 24 | RBB Bancorp | RBB | NASDAQ | 59.5 | 417.2 | 91.3 | 248.4 | 1.6 | - |
| 25 | Northrim BanCorp, Inc. | NRIM | NASDAQ | 98.2 | 253.7 | 93.4 | 249.2 | 0.8 | - |
| 26 | PCSB Financial Corporation | PCSB | NASDAQ | 86.0 | 330.9 | 44.2 | 284.6 | - | 55.8 |
| 27 | National Bankshares, Inc. | NKSH | NASDAQ | 96.2 | 294.3 | 45.9 | 283.2 | - | 54.1 |
| 28 | Ames National Corporation | ATLO | NASDAQ | 98.3 | 263.7 | 49.9 | 259.2 | - | 50.1 |
| 29 | Farmers & Merchants Bancorp, Inc. | FMAO | NASDAQ | 89.7 | 290.9 | 50.7 | 261.0 | - | 49.3 |
| 30 | Spirit of Texas Bancshares, Inc. | STXB | NASDAQ | 89.7 | 413.9 | 57.5 | 371.2 | - | 42.5 |
| 31 | BayCom Corp | BCML | NASDAQ | 90.2 | 284.6 | 58.2 | 256.6 | - | 41.8 |
| 32 | First Bancorp, Inc. | FNLC | NASDAQ | 93.2 | 316.3 | 62.8 | 294.7 | - | 37.2 |
| 33 | Citizens & Northern Corporation | CZNC | NASDAQ | 96.3 | 367.8 | 63.6 | 354.1 | - | 36.4 |
| 34 | Hingham Institution for Savings | HIFS | NASDAQ | 64.3 | 420.1 | 64.1 | 270.1 | - | 36.0 |
| 35 | Bridgewater Bancshares, Inc. | BWB | NASDAQ | 74.4 | 375.6 | 67.5 | 279.5 | - | 32.5 |
| 36 | Business First Bancshares, Inc. | BFST | NASDAQ | 95.1 | 331.9 | 69.6 | 315.6 | - | 30.4 |
| 37 | West Bancorporation, Inc. | WTBA | NASDAQ | 90.3 | 406.5 | 69.8 | 367.0 | - | 30.2 |
| 38 | Southern First Bancshares, Inc. | SFST | NASDAQ | 82.3 | 333.2 | 70.4 | 274.3 | - | 29.6 |
| 39 | FS Bancorp, Inc. | FSBW | NASDAQ | 92.4 | 275.6 | 71.6 | 254.6 | - | 28.4 |
| 40 | American National Bankshares Inc. | AMNB | NASDAQ | 94.7 | 428.8 | 72.4 | 405.8 | - | 27.6 |
| 41 | Red River Bancshares, Inc. | RRBI | NASDAQ | 76.7 | 376.3 | 73.8 | 288.5 | - | 26.2 |
| 42 | Bank First Corporation | BFC | NASDAQ | 87.2 | 478.6 | 74.6 | 417.3 | - | 25.4 |
| 43 | Macatawa Bank Corporation | MCBC | NASDAQ | 76.9 | 377.4 | 77.1 | 290.3 | - | 22.9 |
| 44 | MutualFirst Financial, Inc. | MFSF | NASDAQ | 76.8 | 334.9 | 82.4 | 257.1 | - | 17.7 |
| 45 | Metropolitan Bank Holding Corp. | MCB | NYSE | 85.6 | 388.5 | 82.9 | 332.7 | - | 17.1 |
| 46 | SmartFinancial, Inc. | SMBK | NASDAQ | 90.0 | 330.1 | 83.2 | 297.2 | - | 16.8 |
| 47 | Guaranty Bancshares, Inc. | GNTY | NASDAQ | 69.8 | 384.6 | 83.6 | 268.5 | - | 16.4 |
| 48 | Civista Bancshares, Inc. | CIVB | NASDAQ | 94.6 | 348.0 | 84.2 | 329.3 | - | 15.8 |
| 49 | Peoples Financial Services Corp. | PFIS | NASDAQ | 92.3 | 368.7 | 84.3 | 340.4 | - | 15.7 |
| 50 | Atlantic Capital Bancshares, Inc. | ACBI | NASDAQ | 96.5 | 416.1 | 85.1 | 401.4 | - | 14.9 |
| 51 | Howard Bancorp, Inc. | HBMD | NASDAQ | 84.4 | 321.9 | 85.6 | 271.8 | - | 14.4 |
| 52 | Summit Financial Group, Inc. | SMMF | NASDAQ | 78.4 | 335.3 | 87.2 | 262.8 | - | 12.8 |
| 53 | MetroCity Bankshares, Inc. | MCBS | NASDAQ | 67.5 | 431.2 | 95.8 | 291.0 | - | 4.2 |
| 54 | Cambridge Bancorp | CATC | NASDAQ | 91.6 | 403.9 | 96.6 | 370.1 | - | 3.4 |

*Source: S&P Global Market Intelligence, Piper Sandler & Co.*

We also estimate that there are roughly 16 EGCs that may qualify for exemption from adoption of CECL but are not SRCs. These institutions are highlighted below in Chart K.

## Chart K – Emerging Growth PBEs (Non SRCs) Qualifying for Delay in CECL Adoption

**FDIC-Insured Commercial Banks and Savings Institutions**

| | Name | Ticker | Exchange | Agency | Revenues ($000s) | Float ($MM) | Bank Assets ($000s) | Bank Equity ($000s) | Bank Reserves ($000s) | Bank Reserve Ratio (%) | Bank TE/TA (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Amerant Bank, National Association | AMTB | NASDAQ | SEC | 272,879 | 648 | 7,854,922 | 885,058 | 53,640 | 0.93% | 11.04% |
| 2 | Opus Bank | OPB | NASDAQ | FDIC | 251,297 | 628 | 7,771,343 | 1,083,043 | 45,156 | 0.78% | 9.67% |
| 3 | Merchants Bank of Indiana | MBIN | NASDAQ | SEC | 139,556 | 299 | 6,145,258 | 609,690 | 13,223 | 0.26% | 8.70% |
| 4 | FirstBank | FBK | NYSE | SEC | 334,809 | 677 | 6,084,612 | 762,484 | 31,464 | 0.68% | 8.73% |
| 5 | Byline Bank | BY | NYSE | SEC | 229,131 | 435 | 5,432,970 | 760,218 | 31,585 | 0.82% | 10.71% |
| 6 | Origin Bank | OBNK | NASDAQ | SEC | 194,787 | 770 | 5,365,876 | 559,861 | 37,126 | 0.87% | 9.89% |
| 7 | Amalgamated Bank | AMAL | NASDAQ | FDIC | 178,557 | 299 | 5,030,941 | 486,312 | 33,697 | 0.96% | 9.31% |
| 8 | Allegiance Bank | ABTX | NASDAQ | SEC | 136,720 | 708 | 4,902,178 | 746,403 | 29,808 | 0.77% | 10.73% |
| 9 | CrossFirst Bank | CFB | NASDAQ | SEC | 116,451 | 672 | 4,650,601 | 552,632 | 42,995 | 1.18% | 11.74% |
| 10 | Equity Bank | EQBK | NASDAQ | SEC | 144,176 | 394 | 4,072,856 | 477,506 | 17,875 | 0.68% | 8.15% |
| 11 | HarborOne Bank | HONE | NASDAQ | SEC | 137,382 | 517 | 3,818,755 | 522,949 | 23,044 | 0.72% | 11.56% |
| 12 | Franklin Synergy Bank | FSB | NYSE | SEC | 116,049 | 462 | 3,813,303 | 465,277 | 26,474 | 0.93% | 11.70% |
| 13 | CommunityBank of Texas, N.A. | CBTX | NASDAQ | SEC | 138,913 | 547 | 3,432,117 | 483,642 | 25,576 | 0.96% | 11.88% |
| 14 | People's Intermountain Bank | PUB | NASDAQ | SEC | 123,307 | 492 | 2,443,817 | 318,347 | 30,471 | 1.79% | 11.96% |
| 15 | Alerus Financial, National Association | ALRS | NASDAQ | | 177,973 | 290 | 2,225,753 | 270,973 | 22,984 | 1.31% | 10.12% |
| 16 | Farmers-Merchants Bank of Illinois | MBIN | NASDAQ | SEC | 139,556 | 299 | 191,166 | 30,257 | 482 | 0.33% | 11.30% |
| | **Emerging Growth PBEs (Non SRC)** | | | | **2,831,543** | **8,139** | **73,236,468** | **9,014,652** | **465,600** | **0.84%** | **10.25%** |

*Source: S&P Global Market Intelligence, Piper Sandler & Co.*

Excluding SRCs and EGCs, we estimate that 295 SEC-filing PBEs consisting of commercial banks and savings institutions will be 2020 Adopters of CECL (2020 Adopters). Of this number, 76 have disclosed an estimated CECL impact based on Q3 2019 financials. As shown in Chart L, we estimate the aggregate industry CECL reserve need of $64 billion by using the previously discussed weighted average loan life of approximately 3.2 years and an assumed weighted average net charge-off rate of .56% and applying those metrics to the industry's aggregate gross loan balances of $10.4 trillion.

## Chart L – Preliminary Estimate of Required CECL Reserves

| Commercial Banks & Savings Institutions | # | Total Assets ($MM) | Gross Loans ($MM) | Current Reserves ($MM) | (%) | CECL Reserves ($MM) | (%) | Increase in Reserves ($MM) | (%) |
|---|---|---|---|---|---|---|---|---|---|
| SEC-Filing PBEs (ex SRCs & EGCs) | 295 | 14,714,779 | 7,918,870 | 96,485 | *1.22%* | 142,035 | *1.79%* | 42,459 | *44%* |
| Emerging Growth Companies (Non SRC) | 16 | 73,236 | 55,392 | 466 | *0.84%* | 1,049 | *1.89%* | 478 | *103%* |
| Smaller Reporting Companies (SRCs) | 229 | 282,050 | 211,812 | 2,053 | *0.97%* | 4,010 | *1.89%* | 1,828 | *89%* |
| Other (Private or Non-SEC Filing) | 4,716 | 3,410,357 | 2,215,410 | 26,152 | *1.18%* | 41,946 | *1.89%* | 19,119 | *73%* |
| All Other | 4,961 | 3,765,643 | 2,482,614 | 28,671 | *1.15%* | 47,005 | *1.89%* | 21,425 | *75%* |
| **Industry Total** | **5,256** | **18,480,422** | **10,401,484** | **125,156** | ***1.20%*** | **189,040** | ***1.82%*** | **63,884** | ***51%*** |

*Note: as of 9/30/2019, bank level data*
*Source: FDIC, S&P Global Markets Intelligence, Piper Sandler & Co.*

Note that 2020 Adopters represent $7.9 trillion of loans or about 76% of the $10.4 trillion of total industry loans. Based on the methodology described above, we estimate that the 2020 Adopters will need to increase reserves by about $42 billion or about 44% above the current reserves. While the 295 SEC filers only comprise about 5.6% of the total number of institutions, they comprise about 66% of the total addition reserves required in the banking industry. The 4,961 institutions adopting CECL in 2023 (2023 Adopters) represent 94% of total banking institutions but only about 24% of industry loans and may need to increase reserves by as much as $21.4 billion or 75%. Estimates of CECL reserve amounts for 2023 Adopters and 2020 Adopters without company estimates reflect the remaining balances after backing out the 2020 Adopters with estimates.

## Chart M – Preliminary Estimate of CECL Impact on TE/TA

| Commercial Banks & Savings Institutions | # | Current Tang. Assets ($MM) | Current Tang. Equity ($MM) | Current TE/TA (%) | After Tax CECL Impact ($MM) | CECL PF TE/TA (%) | Change (bps) |
|---|---|---|---|---|---|---|---|
| SEC-Filing PBEs (ex SRCs & EGCs) | 295 | 14,374,188 | 1,302,194 | *9.1%* | 33,542 | *8.85%* | *(21)* |
| Emerging Growth Companies (Non SRC) | 16 | 71,559 | 7,337 | *10.3%* | 378 | *9.78%* | *(48)* |
| Smaller Reporting Companies (SRCs) | 229 | 279,236 | 28,867 | *10.3%* | 1,444 | *9.87%* | *(47)* |
| Other (Private or Non-SEC Filing) | 4,716 | 3,361,414 | 368,806 | *11.0%* | 15,104 | *10.57%* | *(40)* |
| All Other | 4,961 | 3,712,209 | 405,010 | *10.9%* | 16,926 | *10.50%* | *(41)* |
| **Industry Total** | **5,256** | **18,086,397** | **1,707,204** | ***9.4%*** | **50,468** | ***9.19%*** | *(25)* |

*Note: as of 9/30/2019, bank level data*
*Source: FDIC, S&P Global Markets Intelligence, Piper Sandler & Co.*

Using an effective tax rate of 21%, we estimate that the 2020 Adopters will face an after-tax reduction to equity of approximately $33.5 billion or about 21 bps to 8.85%. The 2023 Adopters could face an after-tax reduction of about $17 billion and see a decline in tangible equity/tangible assets of about 41 bps to 10.50%. These numbers are based on high level data and the actual impact may be lessened by strategies taken by the 2020 Adopters and 2023 Adopters as more fully described later in this report.

Perhaps more importantly, the level of required reserves varies significantly based on the measurement or forecast period ranging from benign to stressed. As shown below in Chart N, the stressed environment of Q3 2008 to 2011 would require a CECL reserve of approximately 4.63% to cover expected lifetime losses while the benign period from 2015 to year end 2019 would only require a CECL reserve of .66% to cover expected lifetime losses.

## Chart N – Impact of Measurement Period on NCOs and Required Reserves

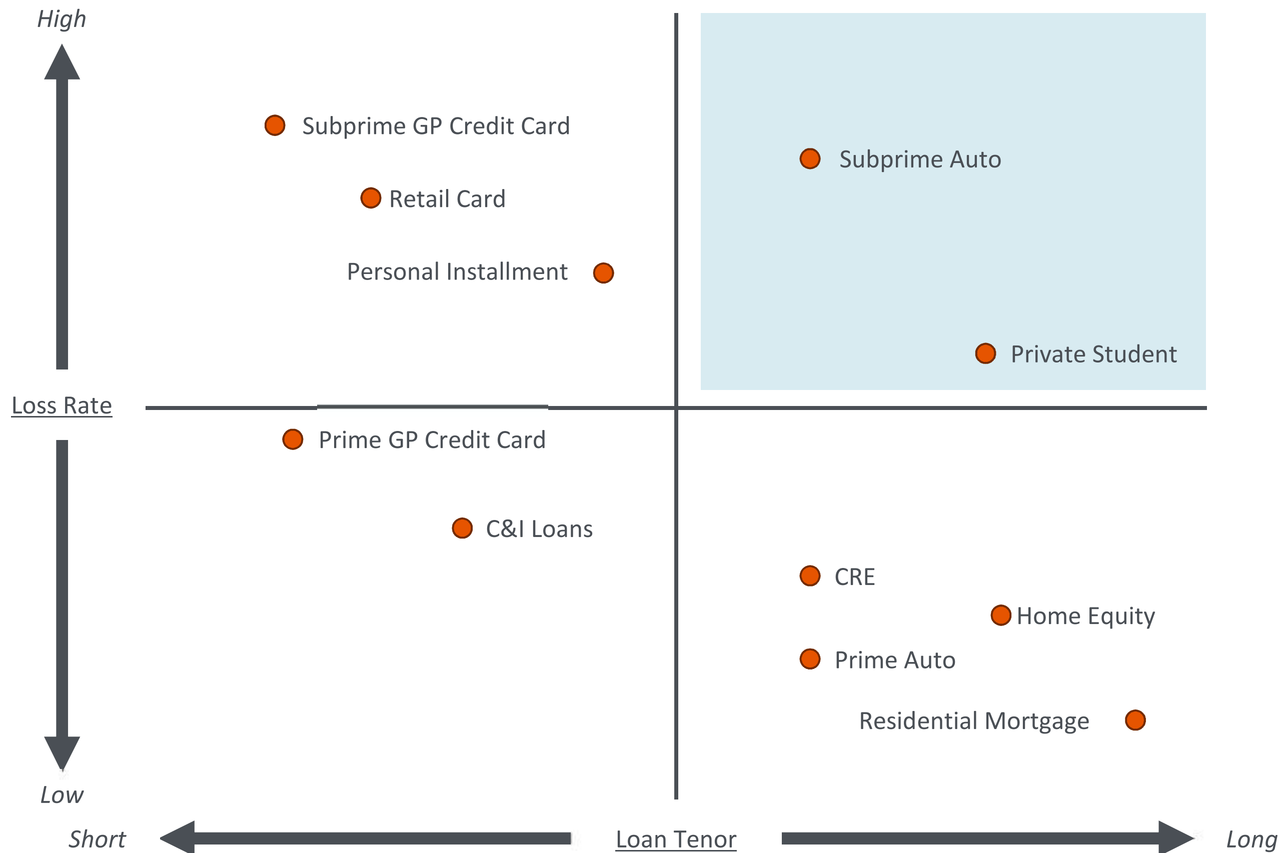
| As of 3Q 2019 | Amounts in Millions of USD | | "BENIGN" Environment | | | "STRESSED" Environment | | |
|---|---|---|---|---|---|---|---|---|
| Loan Category | Average Life (Yrs) | EOP Balances | 2015 - YTD NCO Rate | Est. Losses (%) | Est. Losses ($) | 3Q08 - 2011 NCO Rate | Est. Losses (%) | Est. Losses ($) |
| Mortgage (Closed-End First Lien 1-4 Family Residential Mortgages) | 6.25 | 2,139,430 | 0.05 % | 0.29 % | 6,292 | 1.20 % | 7.50 % | 160,552 |
| Mortgage (Closed-End Second Lien 1-4 Family Residential Mortgages) | 5.75 | 42,878 | 0.05 % | 0.30 % | 130 | 4.64 % | 26.67 % | 11,437 |
| Multi-Family Loans | 6.25 | 451,968 | (0.00%) | (0.00%) | (19) | 1.00 % | 6.23 % | 28,145 |
| Commercial & Industrial Loans | 1.50 | 2,215,838 | 0.34 % | 0.51 % | 11,390 | 1.65 % | 2.48 % | 54,908 |
| CRE (Real Estate Loans Secured by Nonfarm Nonresidential Properties | 3.00 | 1,491,704 | 0.04 % | 0.12 % | 1,741 | 0.89 % | 2.68 % | 39,972 |
| Consumer Loans (Credit Cards) | 0.75 | 892,881 | 3.46 % | 2.60 % | 23,201 | 7.93 % | 5.95 % | 53,094 |
| Consumer Loans (Other Loans to Individuals) | 1.45 | 886,450 | 0.83 % | 1.20 % | 10,673 | 2.18 % | 3.16 % | 27,977 |
| | | | Wt. Avg: 0.20 % | | | Wt. Avg: 1.44 % | | |
| **Subtotal** | 3.23 | 8,121,149 | | **CECL Reserves** | **53,408** | | **CECL Reserves** | **376,085** |
| **Total Loans & Leases** | | 10,401,484 | | **CECL Reserve/Loans** | **0.66 %** | | **CECL Reserve/Loans** | **4.63 %** |
| | | | | **Implied Industry Reserves** | **68,404** | | | **481,685** |

*Note: as of 9/30/2019, bank level data*
*Source: FDIC, S&P Global Markets Intelligence, Piper Sandler & Co.*

While CECL reserves are intended to provide a cushion against losses during a stressed economic environment, the substantial ramp up of reserves required during the stressed environment illustrated above could present a procyclical disincentive for banks to lend thereby exacerbating any economic recovery. This is an area requiring further study and analysis.

Of course, loss rates and required CECL reserves will vary significantly based on the type of loan, maturity, and credit quality. Most banks have historically maintained 12 to 18 months of expected loan losses in allowance for loan losses. To the extent that the average life of a loan is longer than that timeframe and loss rates are higher, the CECL reserve could be much higher. Chart N below illustrates the point where higher risk and longer duration assets such as student loans, commercial real estate mortgages, residential mortgages, and sub-prime auto or consumer loans could have a much higher CECL charge.

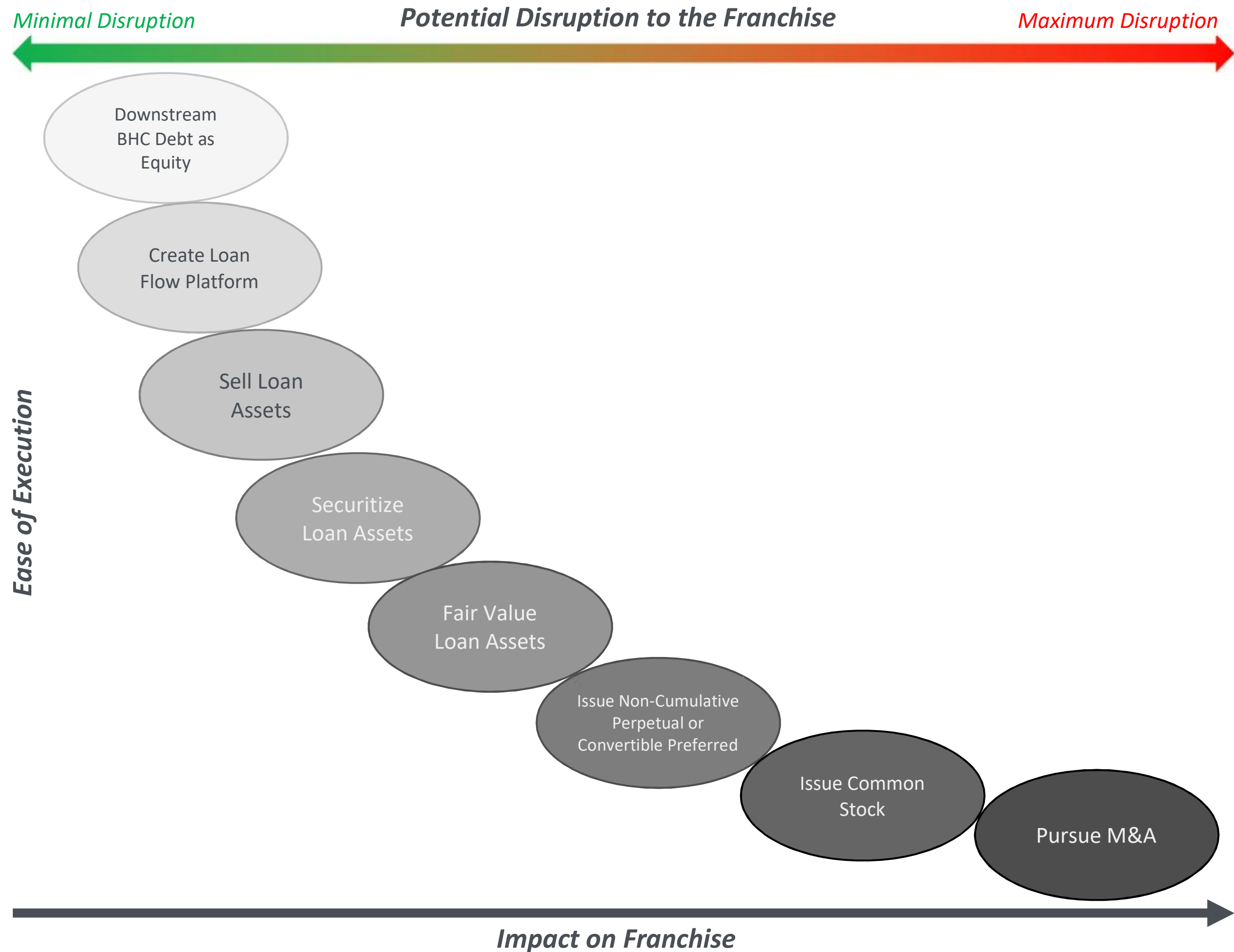
## Chart O – Comparison of CECL Reserves by Loan Type




*Source: Fitch Ratings*

There are a wide variety of alternatives to address the financial and economic impact of CECL that vary significantly in ease of execution and impact on the core banking franchise. As shown below in Chart P, the easiest strategy to execute is the issuance of bank holding company debt and downstreaming to the bank to offset the "Day 1" GAAP charge against retained earnings. While RAP accounting allows the three-year phase-in of the "Day 1" CECL charge, GAAP equity will be immediately impacted by the full tax-effected CECL charge. Selling, securitizing or creating a flow loan sale platform all provide flexibility to manage the CECL reserve requirement while maintaining the core loan origination franchise. Assets that are fair valued are not subject to CECL reserve requirements but entail earnings volatility with quarterly changes in valuation. The issuance of permanent capital such as preferred or common stock certainly helps offset any GAAP charges to equity but provides less flexibility to manage capital structure. Banking institutions may consider selling certain lines of business that are particularly impacted by CECL to non-bank entities that are not subject to regulatory capital requirements. Alternatively, banking institutions with excess capital and reserve capacity may find the opportunistic purchase of assets not favored by CECL to be attractive.

## Chart P – Strategic Alternatives to Address CECL




The student lender, SLM, provided an early indication of the use of strategic alternatives to address CECL. On Wednesday, January 22nd, SLM announced their plans to sell $3 billion of the student loans it originates each year rather than retaining them on balance sheet. It plans to use the cash that would otherwise fund loan to repurchase its common stock. The initial feedback from investors was very positive with a 20% increase in stock price the following day. Clearly, investors ARE paying attention to strategies that 2020 Adopters will use to address CECL requirements.

With the implementation of CECL, the accounting treatment for assets in M&A transactions will primarily depend on whether the assets are classified as Purchase Credit Deteriorated (PCD) or non-PCD assets. As highlighted in the boxes below, PCD assets have experienced "more than an insignificant deterioration in credit quality."

| Non-PCD Assets | PCD Assets |
| --- | --- |
| - Non-PCD assets are currently performing with limited deterioration in credit quality<br>- Acquirer will record the purchased non-PCD assets at the acquisition-date fair value<br>- To bring the overall level of reserve coverage for the acquired asset to the level for similar assets on the acquirer's balance sheet, an additional "Day 2" charge to provision expense will be recognized as of the reporting date<br>- This tax-deductible provision is eligible for inclusion in Tier 2 capital. | - PCD assets have experienced "more than an insignificant deterioration in credit quality"<br>- Initial recognition – expected credit losses are recognized as an allowance through a gross-up to the balance sheet (purchase price plus expected credit losses at time of purchase) – **There is no P&L impact and the gross up amount is not eligible for inclusion in Tier 2 capital**<br>- In subsequent reporting periods, the acquirer will follow the applicable CECL or AFS debt security impairment model with all adjustments recognized through earnings as a provision for credit losses – non-credit discount accreted into income over the remaining life of the PCD asset |

At the time of purchase of PCD assets, expected credit losses are recognized as an allowance through a gross up to the balance sheet (purchase price plus expected credit losses). There is no profit and loss impact and the gross up amount is not eligible for inclusion in tier 2 capital. In subsequent reporting periods, the acquirer will follow the applicable CECL or AFS debt security impairment model with all adjustments recognized through earnings as a provision for credit losses and non-credit discount accreted into income over the remaining life of the PCD asset.

Non-PCD assets are currently performing with limited deterioration in credit quality. The acquirer will record the purchased non-PCD asset at the acquisition-date fair value. To bring the overall level of reserve coverage for the acquired asset to the same level as similar assets on the acquirer's balance sheet, an additional "Day 2" charge to provision expense will be recognized through the income statement as of the reporting date. This tax-deductible provision is eligible for tier 2 capital treatment.

This "Day 2" charge to provision represents a double counting of credit reserves related to the purchase of non-PCD loans and has been a source of much comment to FASB from industry participants. Simply stated, under current accounting standards, performing loans are fair valued with the net value carried over to the buyer's balance sheet. No additional credit reserves are required. This practice tended to understate the reserve coverage of acquired performing loans and made it difficult for analysts to compare reserve coverage of loans for active acquirers with banks that had not grown through acquisition.

With the implementation of CECL, non-PCD loans will be fair valued but additional reserves will be added for the loans such that the reserve coverage for the performing loans is generally consistent with similar loans on the buyer's balance sheet. In contrast, loans with credit impairment or deterioration referred to as purchase credit deteriorated (PCD) loans would have a fair value discount applied to the loans but the loan balance and buyer's allowance would be grossed up for the amount of fair value related to the credit discounts. This double counting or extra credit reserves for performing loans (non-PCD loans) provides an incentive for buyers to classify more loans as PCD or sell such loans prior to transaction closing to monetize the fair value marks.

As previously stated, the regulatory agencies agreed to allow banking organizations the option to amortize the one-time CECL charge to retained earnings and increase in DTAs over three years beginning in the quarter of initial CECL adoption. For regulatory reporting purposes, this three-year amortization of loss will increase retained earnings and average consolidated assets, and decrease temporary difference deferred tax assets and the accumulated credit loss. Note that any transitional amounts of an acquired banking organization that has elected deferral will not be eligible for inclusion in the calculation of regulatory capital ratios for the resulting pro forma banking organization. This M&A penalty must be factored into the analysis of business combinations for banking organizations following the adoption of CECL.

Taken together, the double counting of reserves for non-PCD assets and the M&A penalty which eliminates the deferral of CECL charges for RAP purposes will require a recalibration of pro forma financial results and disclosure for M&A activity. One example of this was Sandy Springs Bancorp Inc.'s September 24, 2019 announcement of its $460.7 million purchase of Revere Bank. Even though Revere Bank had not adopted CECL, the transaction is expected to close in 2020 thereby subjecting Sandy Springs to CECL. Sandy Springs estimated that it would have recognized a fair value discount of about $20 million under current accounting rules, but will record $45 million under CECL. Of this amount, the majority of the difference ($17 million) is the increase in allowance for the acquired non-PCD loans. The higher initial CECL charge will increase tangible book value dilution but accelerate EPS accretion, as future charges for provisions should be decreased. We are still in the early stages of assessing disclosure of the CECL impact on M&A transactions, and investors and analysts will have to get comfortable with comparing pre-CECL deal metrics with post-CECL deal metrics.

# Results

The implementation of CECL will have a significant impact on the financial results of 2020 Adopters which will become apparent with the disclosure of Q1 2020 results. We have previously indicated that incremental CECL reserves for 2020 Adopters could be as much as $42 billion based on a 44% increase in reserves resulting in a decline in TE/TA of about 21 bps.

As described herein, there is potential for great variance in calculations based on assumptions used, including the TTC NCO rate, weighted average loan life, loss estimation models, Q factors and economic outlook. This variance will place great emphasis on the financial disclosure provided by 2020 Adopters for investors, analysts, bankers, regulators and other constituencies to evaluate and compare the results.

CECL disclosure requirements are specified in **Staff Accounting Bulletin 74** with five high level items:

- Brief description of the new standard
- The date adoption is required and the date the company plans to adopt
- The methods of adoption allowed by the standards and the method expected to be utilized by the company
- The impact that adoption of the standard is expected to have on the financial statements of the company, and if not known or reasonably estimable, a statement to that effect
- The potential impact of other significant matters the company believes might result from the adoption of the standard

PBEs are expected to provide a higher level of financial disclosure under SAB 74. These requirements include disclosure of quantitative and qualitative credit quality information by class of financial receivable and major security type to allow investors to understand how credit quality is monitored and to assess the quantitative and qualitative risks inherent in credit quality of the assets including: (i) description of credit quality indicators, and (ii) amortized cost basis by credit quality indicator, and (iii) date or date range of last assessment of the credit quality indicator. PBEs are required to disclose the amortized cost basis by each credit quality indicator and by origination year for up to 5 historical periods. For originations before the fifth period, entities may report at the aggregate level.

The **SEC** has also provided its own version of CECL disclosure with five requirements:

- Describe the effect of new accounting policies resulting from the adoption of the standards and a comparison with the old standard
- Describe reasonable estimable quantitative information, even if it lacks complete certainty or is only for a subset of the company's arrangements
- Describe qualitative information on the impact of the standard on future financial statements, if its effect is unknown
- Describe progress toward implementing the standards, including significant outstanding items
- Disclosure should be included in financial statements footnotes, if the change in accounting is pervasive or material

The recently released **Interagency Policy Statement of Allowances for Credit Losses** provides a regulatory perspective on CECL reserve methodology and requirements in a number of key areas including: collective evaluation of credit losses, determination of the contractual term of a financial asset, historical loss information, use of reasonable and supportable forecasts, reversion methodology, validation of allowance for credit losses (ACLs), and priorities for examiner review of ACLs. We have summarized this guidance below.

### Collective Evaluation of Expected Losses

- Internal or external credit scores or credit ratings
- Risk ratings or classifications
- Financial asset type
- Collateral type
- Size
- Effective interest rate
- Term
- Geographic Location
- Industry of the Borrower
- Vintage

### Contractual Term of a Financial Asset

- Measure expected credit losses over contractual term including expected prepayments
- Exclude renewals, extensions and modifications from the contractual term unless part of the contract or not unconditionally cancellable by the lender
- Management has to evaluate likelihood of execution

### Historical Loss Information

- May be based on internal information, external information, or combination, or both
- May need to adjust to current asset specific characteristics such as:
  - Differences in underwriting standards
  - Portfolio mix
  - Differences in historical asset contractual terms relative to current contractual terms
- Adjustments to historical loss information may be needed if current condition and reasonable and supportable forecasts differ from conditions that existed during the historical loss period
- Adjustments may be quantitative or qualitative to reflect changes in relevant data

## Reasonable and Supportable Forecasts (RNS)

- Forward looking information that is reasonable and supportable and relevant to assessing the collectability of cash flows
- May extend over contractual life or shorter period
- May vary by portfolio segment or individual forecast input
- Data may be from internal or external sources or both
- Not required to incur cost and effort to collect data; should use reasonably available and relevant information
- Evaluate the appropriateness of the RNS forecast period each reporting period consistent with other inputs used to estimated expected credit losses
- May develop RNS forecasts by using one or more economic scenarios; Not required to use multiple economic scenarios

## Reversion

- Loss estimates beyond the RNS period are required to revert to historical loss information
- CECL does not require a specific reversion methodology as can be immediate, over time on a straight-line basis, or any other rational and systematic method
- Reversion techniques may vary and should be evaluated for appropriateness in each reporting period
- Historical loss information could be based on long-term average losses or losses during a particular period
- Should not adjust historical loss information for current economic conditions beyond the RNS period
- But historical loss information may need to be adjusted for difference in underwriting standards, portfolio mix, and loan terms

## Valuation of Allowance for Credit Losses (ACLs)

- Management is responsible for documenting the amount of ACL for loans, HTM securities, AFS securities, and off-balance-sheet credit exposures
- Documentation should include ACL calculations, qualitative adjustments, and any other adjustments relevant to assessing the collectability of cash flows
- Board of directors or management committee required to review
- Example of acceptable techniques include:
  - Comparison of actual to expected write-offs
  - Ratio analysis of ACLs relative to NPAs, NCOs and classified assets
  - Comparison of ACLs to peer group levels of loans
- No need to meet peer group medians or target ratios if appropriate loss framework used to estimate losses
- **Third party validation of ACL required to confirm process remains appropriate for size, complexity and risk profile.**

## Examiner Review of ACLs

- Evaluate the institution's ACL policies and loss estimation methods including documentation supporting reasonableness of assumptions
- Assess effectiveness of Board oversight as well as management effectiveness in identifying, measuring, monitoring and controlling credit risk
- Review appropriateness and reasonableness of overall level of ACLs relative to level of credit risk, complexity of assets, available information on collectability including RNS forecasts
- Review ACLs reported in regulatory reports to determine whether consistent with institution's loss estimation methods
- **Verify that models used in loss estimation process are subject to initial and ongoing validation activities**
- **Review the effectiveness of the institutions third-party risk management framework associated with ACL estimation**
- Examiners should accept an institution's ACL estimate where management has provided adequate support for loss estimation process employed

From this Interagency guidance, it is clear that the determination of an appropriate "Day 1" and "Day 2" CECL reserve will involve much qualitative and quantitative analysis and documentation. While there is no specific loss methodology required, management must be prepared to determine the appropriate through-the-cycle loss rate by loan type, develop reasonable and supportable forecasts of economic activity that will influence the historical loss rate, develop and explain the timeframe for reversion to historical NCOs means, and validate the determination of the ACL. According to the Interagency guidance, **examiners will be expected to accept an institution's ACL IF management has provided adequate support for the loss estimation process**. No doubt the initial rounds of bank examinations following the adoption of CECL will involve much discussion of the institution's policies and procedures, level of ACL relative to risk, adequacy of third-party validation and accuracy of disclosure in regulatory reports, among other issues.

As discussed previously, the early results from 2020 Adopter pre-announcements are in and the preliminary estimates for the increase in "Day 1" reserves approximates $42.5 billion or about $33.5 billion after-tax. If we assume that all 2020 Adopters elect to phase-in this charge over three years for regulatory accounting purposes, the impact on lending capacity over a range of assumed multipliers (from 1 to 10x) is shown below in Chart Q. This highlights that with a 10x lending multiple in the year 2023 when the CECL charges will be fully phased-in, the reduction to tangible equity could cause a reduction in bank lending of as much as $327 billion. Keep in mind that 2023 is also the year when all other banking institutions are required to adopt CECL.

## Chart Q – Potential Impact of CECL "Day 1" Charges on Bank Lending

**CECL charge "Day 1" Phase In Schedule (RAP)**

| | | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| | | 25% | 50% | 75% | 100% |
| | *ATX Equity Charge* | *$ 8,386* | *$ 16,771* | *$ 25,157* | ***$ 33,542*** |
| Lending Multiple of Tangible Equity | *2x* | $ 16,771 | $ 33,542 | $ 50,314 | $ 67,085 |
| | *3x* | $ 25,157 | $ 50,314 | $ 75,470 | $ 100,627 |
| | *4x* | $ 33,542 | $ 67,085 | $ 100,627 | $ 134,169 |
| | *5x* | $ 41,928 | $ 83,856 | $ 125,784 | $ 167,712 |
| | *6x* | $ 50,314 | $ 100,627 | $ 150,941 | $ 201,254 |
| | *7x* | $ 58,699 | $ 117,398 | $ 176,097 | $ 234,796 |
| | *8x* | $ 67,085 | $ 134,169 | $ 201,254 | $ 268,339 |
| | *9x* | $ 75,470 | $ 150,941 | $ 226,411 | $ 301,881 |
| | *10x* | $ 83,856 | $ 167,712 | $ 251,568 | **$ 335,423** |

The current, relatively benign economic environment and the three-year phase-in of the initial CECL charge for 2020 Adopters may provide a false sense of security for some. But the combination of concerns about a recessional environment projected by some analysts in 2 to 3 years along with the full phase-in of CECL for 2020 Adopters and the adoption of CECL in 2023 for all others reinforces the need for the quantitative impact study on the effects of CECL in a recessionary environment. Industry professional have repeatedly called for such a study and pointed out the shortfalls of previous analysis.[4]

[4] The Need for a CECL Quantitative Impact Study. A discussion paper of the American Bankers Association. Michael L. Gullette and Joshua Stein. September 2019.

# Summary and Key Issues

Ready or not CECL will be implemented by 2020 Adopters in Q1 of 2020. We estimate that "Day 1" CECL reserves will increase by 44% or $42 billion or about $33.5 billion after-tax against GAAP retained earnings but be phased-in over three years for regulatory accounting purposes. This charge will apply to approximately 295 large SEC filers representing about 76% of total U.S. loans. The "Day 2" CECL charge at the end of Q1 2020 will likely be much smaller but more volatile and tied to Q1 NCOs, net loan growth, and forecasted economic conditions. These "Day 2" CECL charges flow through the income statement without benefit of phase-in for regulatory capital purposes.

Longer duration and higher risk loans will attract much higher CECL reserves. As such, student loans, longer term consumer credit and higher risk loans may face limits on availability or repricing of credit. M&A activity will likely be impacted by two M&A penalties. Non-PCD loans will be subject to double counting of reserves to bring acquired loans in line with similar loans of the acquirer. Acquirers will have an incentive to classify more loans as PCD and thereby avoid the double counting. Second, any transitional capital and reserve amounts of the seller will be excluded from the buyer's pro forma regulatory capital calculations thereby complicating regulatory capital compliance.

The implementation of CECL will bring real challenges to the comparability of financial information. There will be vast differences for 2020 Adopters vs 2023 Adopters, PCD vs non-PCD assets, and ACL vs AACL reserves. Much management time and attention must also be focused on SAB 74 and SEC disclosure requirements for reserve methodology and explaining differences between historical loss rates, current NCOs, and the forecast period.

The procyclical nature of forward looking CECL reserves may exacerbate recovery from the next recession as expected higher losses during a recessionary period may double count losses already embedded in the historical results through-the-cycle loss rates. In addition, reductions to tangible equity from CECL charges may limit future lending capacity.

With the pain of the 2007 – 2009 financial crisis still vivid in our collective memories and FASB and the regulators charged by Congress to fix the problem, CECL will be implemented as proposed beginning in Q1 2020. But there remains much trepidation about the impact on access to loans, loan pricing, capital markets, M&A, and economic growth, etc. We expect that the forthcoming quantitative impact study will be closely watched and perhaps expanded to include other issues noted by Congress.

Overall, we think lenders, equity and debt investors, analysts, lawyers, regulators, rating agencies and borrowers, among other constituencies, will continue to be very focused on CECL and prepare for its impact as highlighted below:

- Market Impact Study: While there is agreement on the need for a forward looking reserve methodology, there is no consensus by banks for an alternative to CECL; an expansive quantitative impact study has not been done but Congress just authorized the U.S. Treasury to undertake a limited study on any changes needed to capital rules; any negative impact on the U.S. economy could bring more focus to this issue; confusion over comparability of financial results for CECL vs non-CECL adopters

- Public Market Valuation: Impact on stock market valuation from large decrease in GAAP equity despite ability to amortize charges for RAP capital; investors likely to focus on fully amortized GAAP tangible equity after CECL charges which may negatively impact valuation of banks with large CECL charges

- RAP vs GAAP Differences: confusion over the significant differences between RAP and GAAP financials with CECL; regulators will focus on RAP but what if extreme differences arise; RAP vs GAAP difference from CECL implementation may not be well understood by market participants

- Public Market Debt Ratings: Debt ratings based on GAAP; rating agencies base their ratings on loss absorbing capacity; the increase in CECL reserves adds to loss absorbing capacity and the three year amortization of the initial charge provides cushion for regulatory capital ratios

- 1.25% Tier 2 Limitation: Ability to include more than 1.25% of AACL in tier 2 capital (final rule alludes to potential flexibility but not confirmed); only reserves recognized through the income statement or retained earnings are eligible for inclusion in tier 2 capital; regulators may be willing to consider an increase above 1.25% based on disclosure of results

- DTA Limitation: the Basel III Simplification effective January 1, 2020, increases the DTA limitation to 25% of CET1 and the RAP phase in against capital over three years makes this issue much less of a concern

- M&A Penalties: Buyers required to accelerate amortization of any seller CECL charges that would otherwise have been phased-in for regulatory capital purposes; the double counting of reserves for non-PCD loans represents a further penalty for M&A activity

- SAB 74 and SEC Requirements: the disclosure of CECL methodology and RNS assumptions impacting Q factors will require much management focus and attention; most banks will have a significant difference between their through-the-cycle loss rate and their current NCO rates which will have to be explained

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