

# Bank Financial Performance Tool

## Ratio Methodology and Data Sources

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Last updated: 2026-06-18 Data source: FFIEC Call Report (quarterly filings, 2001 Q1 – 2026 Q1) Database: bank\_financials (PostgreSQL); view: bank\_ratios

All dollar amounts in the underlying schedule tables are stored in \$thousands. Ratios are expressed as percentages (e.g., 12.50 = 12.50%) unless noted.

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## SECTION 1 — FOUNDATIONAL CONVENTIONS

### 1.1 RCFD vs. RCON Prefixes

FFIEC Call Report data uses two prefix conventions:

rcfd = consolidated total (domestic + foreign offices) – used by large banks and bank holding companies filing FFIEC Form 031

rcon = domestic offices only – used by community banks filing FFIEC Form 041 or FFIEC Form 051

All key balance sheet and income items use:

```
COALESCE(NULLIF(rcfd_code, '')::NUMERIC, NULLIF(rcon_code, '')::NUMERIC)
```

This ensures coverage of both filer types with a single formula.

### 1.2 Annualization of Income Statement Items

Schedule RI (income statement) items are year-to-date (YTD) cumulative totals. They are annualized using:

```
ann_factor = 12.0 / EXTRACT(MONTH FROM report_date)
```

Q1 (March 31): × 4

Q2 (June 30): × 2

Q3 (September 30): × 4/3

Q4 (December 31): × 1

This matches UBPR/FFIEC annualization practice.

### 1.3 Average Balances — Schedule RCK

Schedule RCK provides quarterly average balances. These are used in preference to period-end values wherever available. If RCK data is absent for a bank-quarter, the formula falls back to the period-end balance from Schedule RC.

### 1.4 Capital Ratios — Text Format

Regulatory capital ratios in Schedule RCRI are stored as text strings in the format "XX.XXXX%" (e.g., "13.7500%"). The % character is stripped before casting to numeric:

```
NULLIF(REPLACE(rcri.rcoa7204, '%', ''), '')::NUMERIC
```

Bank-level ratios (rcoa prefix) are preferred over consolidated BHC ratios (rcfa prefix); rcoa is populated for approximately 97% of reporters.

### 1.5 Comparison with UBPR

This tool uses non-tax-equivalent (non-TE) income figures. The UBPR uses tax-equivalent (TE) income, which grosses up tax-exempt income (e.g., from municipal bonds) to a pre-tax equivalent. This creates two known systematic differences that CANNOT be eliminated without TE income data:

- NIM: our NIM is typically 5-15 bp lower than UBPR NIM
- Efficiency ratio: our ratio is typically 0.3-2.5% higher than UBPR

Banks with large municipal bond portfolios show wider gaps.

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## SECTION 2 — BALANCE SHEET ITEMS (base fields, not ratios)

### 2.1 Total Assets

Source: Schedule RC

Formula: COALESCE(rcfd2170, rcon2170)

### 2.2 Equity Capital

Source: Schedule RC

Formula: COALESCE(rcfd3210, rcon3210)

Includes all components of stockholders' equity.

### 2.3 Gross Loans & Leases

Source: Schedule RC

Formula: COALESCE(rcfdb528, rconb528)

Total loans and leases, net of unearned income, BEFORE deducting the allowance for credit losses. This is the standard UBPR denominator for credit quality ratios.

### 2.4 Loans Held for Sale (HFS)

Source: Schedule RC

Formula: COALESCE(rcfd5369, rcon5369)

Loans originated or acquired with intent to sell. Included in net loans (section 3.3) to match the UBPR "Net Loans & Leases" definition.

### 2.5 Allowance for Credit Losses (ACL / ALLL)

Source: Schedule RC

Formula: COALESCE(rcfd3123, rcon3123)

The reserve balance deducted from gross loans to arrive at net loans.

### 2.6 Net Loans & Leases

Formula: GREATEST(gross\_loans + hfs\_loans - ACL, 0)

Matches the UBPR definition: HFI loans + HFS loans - allowance.

### 2.7 Total Deposits

Source: Schedule RC

Formula: COALESCE(rcon2200, 0) + COALESCE(rcfn2200, 0)

Large banks (FFIEC 031 filers) report domestic deposits under rcon2200 and foreign-office deposits separately under rcfn2200. Both must be summed.

Do NOT use COALESCE(rcfd2200, rcon2200) – rcfd2200 is blank for large banks, which would silently drop all foreign deposits.

### 2.8 Investment Securities — AFS

Source: Schedule RC

Formula: COALESCE(rcfd1773, rcon1773)

Available-for-sale securities at fair value.

### 2.9 Investment Securities — HTM

Source: Schedule RC

Formula: COALESCE(rcfdjj34, rconjj34, rcfd1754, rcon1754)

Held-to-maturity securities at amortized cost.

NOTE: Post-2022, FFIEC 031 large-bank filers report HTM under rcfdjj34/rconjj34. Prior filers and all FFIEC 041/051 community banks use rcfd1754/rcon1754. The four-way COALESCE covers both code generations.

### 2.10 Average Assets

Source: Schedule RCK (preferred) or Schedule RC (fallback)

Formula: COALESCE(rck.rcfd3368, rck.rcon3368, rc.rcfd2170, rc.rcon2170)

### 2.11 Average Loans (domestic)

Source: Schedule RCK (preferred) or Schedule RC (fallback)  
Formula: COALESCE(rck.rcon3360, rc.rcfdb528, rc.rconb528)  
rcon3360 = average total loans and leases, domestic offices (quarterly avg).

### 2.12 Average Loans (foreign offices)

Source: Schedule RCK  
Formula: COALESCE(rck.rcfn3360, 0)  
Only populated for FFIEC 031 large-bank filers with foreign offices.  
Defaults to 0 for community banks.

### 2.13 Average Interest-Bearing Deposits at Other Institutions

Source: Schedule RCK  
Formula: COALESCE(rck.rcfd3381, rck.rcon3381)  
NOTE: Both rcfd3381 AND rcon3381 must be checked. Community banks (FFIEC 041/051) populate rcon3381 only; large banks use rcfd3381. Omitting rcon3381 causes NIM overstatement for community banks because a significant earning asset class is excluded from the denominator.

### 2.14 Average Federal Funds Sold

Source: Schedule RCK  
Formula: COALESCE(rck.rcfd3365, rck.rcon3365)  
Average fed funds sold and securities purchased under repos.

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## SECTION 3 — CAPITAL ADEQUACY RATIOS

### 3.1 Equity / Assets

Formula:  $\text{equity\_capital} / \text{total\_assets} \times 100$   
Simple book equity ratio. Available for all 101 quarters loaded.  
Source: Schedule RC

### 3.2 Tangible Common Equity (TCE) Ratio

Formula:  $(\text{equity\_capital} - \text{goodwill} - \text{other\_intangibles}) / \text{total\_assets} \times 100$   
Goodwill: COALESCE(rcfd3163, rcon3163)  
Other intangibles: COALESCE(rcfd0426, rcon0426)  
Source: Schedule RC

### 3.3 Tier 1 Leverage Ratio

Formula: text field stripped of "%" → numeric  
Source: Schedule RCRI, field rcoa7204 (preferred) or rcfa7204  
Basel III requirement: minimum 4%. Available 2015 Q1 onward.

### 3.4 Tier 1 Risk-Based Capital Ratio

Formula: text field stripped of "%" → numeric  
Source: Schedule RCRI, field rcoa7206 (preferred) or rcfa7206  
Basel III requirement: minimum 6%. Available 2015 Q1 onward.

### 3.5 Total Capital Ratio (Total Risk-Based Capital)

Formula: text field stripped of "%" → numeric  
Source: Schedule RCRI, field rcoa7205 (preferred) or rcfa7205  
Basel III requirement: minimum 8%. Available 2015 Q1 onward.

### 3.6 CET1 Ratio (Common Equity Tier 1)

Formula: text field stripped of "%" → numeric  
Source: Schedule RCRI, field rcoa793 (preferred) or rcfa793  
Basel III requirement: minimum 4.5%. Available 2015 Q1 onward.

### 3.7 Texas Ratio

Formula:  $(\text{past\_due\_90} + \text{nonaccrual}) / (\text{tangible\_equity} + \text{ACL}) \times 100$

Values > 100% historically associated with elevated failure risk.

Source: Schedule RC, RCN

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## SECTION 4 — EARNINGS RATIOS

### 4.1 Return on Assets (ROA)

Formula:  $\text{net\_income\_ytd} \times \text{ann} / \text{avg\_assets} \times 100$

net\_income\_ytd: Schedule RI, field riad4340

Annualized and divided by average assets from Schedule RCK.

### 4.2 Return on Equity (ROE)

Formula:  $\text{net\_income\_ytd} \times \text{ann} / \text{equity\_capital} \times 100$

Uses period-end equity capital from Schedule RC.

### 4.3 Net Interest Margin (NIM)

Formula:  $\text{net\_interest\_income\_ytd} \times \text{ann} / \text{avg\_earning\_assets} \times 100$

net\_interest\_income\_ytd: Schedule RI, field riad4074

avg\_earning\_assets =

avg\_loans (domestic, Schedule RCK rcon3360)

+ avg\_loans\_foreign (RCK rcfn3360)

+ avg\_ib\_deposits\_at\_fis (RCK COALESCE(rcfd3381, rcon3381))

+ afs\_securities (period-end, RC rcfd1773/rcon1773)

+ htm\_securities (period-end, RC COALESCE(rcfdjj34, rconjj34, rcfd1754, rcon1754))

Period-end securities are used as a proxy for average securities because Schedule RCK does not include average investment security balances.

vs. UBPR: UBPR NIM uses tax-equivalent NII. Our NIM is non-TE.

Expected gap: 5-15 basis points (wider for banks with more munis).

### 4.4 Net Interest Spread

Formula:  $(\text{loan\_interest\_income\_ytd} \times \text{ann} / \text{avg\_loans} \times 100)$

-  $(\text{total\_interest\_expense\_ytd} \times \text{ann} / \text{avg\_assets} \times 100)$

loan\_interest\_income\_ytd: Schedule RI, field riad4010 (interest & fees on loans)

total\_interest\_expense\_ytd: Schedule RI, field riad4073

### 4.5 Loan Yield

Formula:  $\text{loan\_interest\_income\_ytd} \times \text{ann} / \text{avg\_loans} \times 100$

Annualized interest and fees on loans divided by average loans.

### 4.6 Cost of Funds

Formula:  $\text{total\_interest\_expense\_ytd} \times \text{ann} / \text{avg\_assets} \times 100$

Annualized total interest expense divided by average assets.

Note: a true cost-of-funds calculation would divide by interest-bearing liabilities, but average IB liabilities are not available in Schedule RCK.

### 4.7 Pre-Provision Net Revenue (PPNR) / Assets

Formula:  $(\text{NII} + \text{noninterest\_income} - \text{noninterest\_expense}) \times \text{ann} / \text{avg\_assets} \times 100$

Earnings power before credit costs and taxes.

noninterest\_income\_ytd: Schedule RI, field riad4079

noninterest\_expense\_ytd: Schedule RI, field riad4093

### 4.8 Efficiency Ratio

Formula:  $\text{noninterest\_expense} / (\text{NII} + \text{noninterest\_income}) \times 100$

Capped at 999.99% to suppress extreme outliers.

Lower is better; community bank median is approximately 60–65%.

vs. UBPR: UBPR efficiency ratio uses TE-adjusted NII in the denominator and excludes AFS securities gains/losses from noninterest income. Our formula uses non-TE NII and includes all noninterest income items (riad4079). Expected overstatement: 0.3–2.5% vs. UBPR, wider for banks with large municipal bond portfolios or large realized AFS securities losses.

#### 4.9 Noninterest Income / Assets

Formula:  $\text{noninterest\_income\_ytd} \times \text{ann} / \text{avg\_assets} \times 100$   
Schedule RI, field riad4079.

#### 4.10 Noninterest Expense / Assets (Overhead Ratio)

Formula:  $\text{noninterest\_expense\_ytd} \times \text{ann} / \text{avg\_assets} \times 100$   
Schedule RI, field riad4093.

#### 4.11 Provision / Assets

Formula:  $\text{provision\_ytd} \times \text{ann} / \text{avg\_assets} \times 100$   
provision\_ytd: Schedule RI, field riad4230.

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## SECTION 5 — CREDIT QUALITY RATIOS

#### 5.1 Net Charge-Off Rate (NCO / Avg Loans)

Formula:  $(\text{chargeoffs\_ytd} - \text{recoveries\_ytd}) \times \text{ann} / \text{avg\_loans} \times 100$   
chargeoffs\_ytd: Schedule RIBI, field riad4635 (total loans charged off)  
recoveries\_ytd: Schedule RIBI, field riad4605 (total recoveries)  
Annualized net charge-offs divided by average loans.

#### 5.2 Provision / Net Charge-Offs (Reserve Build Coverage)

Formula:  $\text{provision\_ytd} / (\text{chargeoffs\_ytd} - \text{recoveries\_ytd})$   
Values > 1.0 (100%) indicate the bank is building reserves faster than it is charging off loans.

#### 5.3 NPA Ratio (Nonperforming Assets / Gross Loans)

Formula:  $(\text{past\_due\_90} + \text{nonaccrual}) / \text{gross\_loans} \times 100$   
past\_due\_90: Schedule RCN  
Post-2017: COALESCE(rcfd1407, rcon1407)  
Pre-2017 (FFIEC 041): rcon1607  
nonaccrual: Schedule RCN  
Post-2017: COALESCE(rcfd1403, rcon1403)  
Pre-2017 (FFIEC 041): rcon1608  
Uses gross loans (before ACL) as denominator, consistent with UBPR.

#### 5.4 30–89 Days Past Due Ratio

Formula:  $\text{past\_due\_30\_89} / \text{gross\_loans} \times 100$   
past\_due\_30\_89: Schedule RCN  
Post-2017: COALESCE(rcfd1406, rcon1406)  
Pre-2017 (FFIEC 041): rcon1606

#### 5.5 NPA / Total Assets

Formula:  $(\text{past\_due\_90} + \text{nonaccrual}) / \text{total\_assets} \times 100$

#### 5.6 ACL Coverage Ratio (Allowance / NPA)

Formula:  $\text{ACL} / (\text{past\_due\_90} + \text{nonaccrual}) \times 100$   
Values > 100% indicate the allowance fully covers nonperforming assets.

#### 5.7 ACL / Gross Loans (Allowance Ratio)

Formula:  $\text{ACL} / \text{gross\_loans} \times 100$   
Reserve level as a percentage of the gross loan portfolio.

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## SECTION 6 — BALANCE SHEET STRUCTURE RATIOS

### 6.1 Net Loans / Assets

Formula:  $\text{net\_loans} / \text{total\_assets} \times 100$   
 $\text{net\_loans} = \text{gross\_loans} + \text{hfs\_loans} - \text{ACL}$  (see section 2.6)  
Measures the proportion of assets deployed in lending.

### 6.2 Net Loans / Deposits

Formula:  $\text{net\_loans} / \text{total\_deposits} \times 100$   
Loan-to-deposit ratio using the UBPR net loans definition.

### 6.3 Securities / Assets

Formula:  $(\text{afs\_securities} + \text{htm\_securities}) / \text{total\_assets} \times 100$

### 6.4 Cash / Assets

Formula:  $(\text{cash\_nonib} + \text{cash\_ib}) / \text{total\_assets} \times 100$   
cash\_nonib: Schedule RC, COALESCE(rcfd0081, rcon0081)  
cash\_ib: Schedule RC, COALESCE(rcfd0071, rcon0071)

### 6.5 Intangibles / Assets

Formula:  $(\text{goodwill} + \text{other\_intangibles}) / \text{total\_assets} \times 100$

### 6.6 Equity / Loans

Formula:  $\text{equity\_capital} / \text{gross\_loans} \times 100$

### 6.7 Deposits / Assets

Formula:  $\text{total\_deposits} / \text{total\_assets} \times 100$

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## SECTION 7 — LOAN MIX RATIOS (Schedule RCCI)

All loan mix ratios use gross\_loans (rcfdb528 / rconb528) as the denominator. Component numerators are from Schedule RCCI (loan detail, period-end balances).

### 7.1 Agricultural Loans %

$= (\text{farmland\_RE} + \text{ag\_production}) / \text{gross\_loans} \times 100$   
farmland\_RE: COALESCE(rcfd1420, rcon1420)  
ag\_production: COALESCE(rcfd1590, rcon1590)

### 7.2 Commercial Real Estate (CRE) %

$= (\text{construction} + \text{multifamily} + \text{nonfarm\_nonresidential}) / \text{gross\_loans} \times 100$

### 7.3 Construction & Land Development %

$= (\text{construction\_14fam} + \text{construction\_other}) / \text{gross\_loans} \times 100$   
construction\_14fam: COALESCE(rcfdf158, rconf158)  
construction\_other: COALESCE(rcfdf159, rconf159)

### 7.4 Multifamily %

$= \text{multifamily\_loans} / \text{gross\_loans} \times 100$   
COALESCE(rcfd1460, rcon1460)

### 7.5 Nonfarm Nonresidential %

$= (\text{nonfarm\_nonres\_owner} + \text{nonfarm\_nonres\_other}) / \text{gross\_loans} \times 100$

```
owner-occupied: COALESCE(rcfdf160, rconf160)
other:          COALESCE(rcfdf161, rconf161)
```

## 7.6 C&I; Loans %

```
= ci_loans / gross_loans × 100
Community banks: rcon1766 (total C&I)
Large banks: rcfd1763 (US addressees) + rcfd1764 (non-US addressees)
```

## 7.7 Credit Card %

```
= credit_card_loans / gross_loans × 100
COALESCE(rcfdb538, rconb538)
```

## 7.8 CRE Concentration Ratio

```
= CRE_loans / total_risk_based_capital × 100
Regulatory guidance threshold: 300%. CRE here = construction +
multifamily + nonfarm nonresidential (excludes 1-4 family).
```

## 7.9 Construction Concentration Ratio

```
= construction_loans / total_risk_based_capital × 100
Regulatory guidance threshold: 100%.
```

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# SECTION 8 — PREDECESSOR STITCHING

When viewing a bank's time series that spans mergers or acquisitions, the `institution\_lineage` table resolves the full predecessor chain. The stitched query uses `DISTINCT ON (report_date)` with `ORDER BY total_assets DESC` to select the dominant (largest) entity for each reporting period when multiple predecessors overlap. This prevents chart spikes caused by double-counting.

Key table: `institution_lineage` `ultimate_rssd` — RSSD ID of the surviving (current) institution `successor_cert` — immediate next FDIC CERT (one hop forward) `ultimate_cert` — FDIC CERT of the final surviving institution `chain_depth` — merger hops (max observed in dataset: 10) `failed` — boolean; `fail_date`, `cost_to_dif` if applicable

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# SECTION 9 — VALIDATION

Ratios are periodically validated against the FDIC BankFind API (<https://banks.data.fdic.gov/api/financials>), which draws from the same FFIEC Call Report data as the UBPR. Run: `python ubpr_compare.py`

The script samples 10 banks stratified by asset size and compares 11 ratios. As of 2026-06-18, all ratios except efficiency ratio match to within expected tolerances. The efficiency ratio systematically overstates vs. FDIC/UBPR by 0.3–2.5% due to the tax-equivalent adjustment in the UBPR denominator.