

Notes on forming consistent time series

These notes document known changes in variable definitions, and how things have been spliced and/or aggregated by Anil Kashyap and Jeremy Stein to yield sensible data. (See Kashyap and Stein, "What Do A Million Banks Have to Say About the Monetary Transmission Mechanism", National Bureau of Economic Research Working Paper 6056.) In general the largest banks only provide data on a consolidated foreign and domestic basis. This requires using the RCFD data series (rather than the RCON) series. As a rule for the banks which do not have foreign operations one can assume that the RCFD data will be identical to the RCON data. Be advised that detailed data on the foreign deposits is not available.

Balance sheet: assets

Total Assets

Definition:

1976– Total assets (RCFD2170)

Notes and known inconsistencies:

! 2170 is *net* of loan loss reserves (RCFD3123)

Unresolved questions:

! Lease losses netted out after 84:3.

! Switch from 1000 to 2146 measure of securities in transaction accounts Y discontinuity in 84:3.

Total Securities

Definition:

76–83 U.S. Treasury Securities (0400) + U.S. Government Agency and Corporation Obligations (0600) + Obligations of States & Political Subdivisions (0900) + All Other Bonds, Stocks, and Securities (0380).

1984–1993 Total Investment Securities (0390) + Assets Held in Trading Accounts (2146)

1993– Securities Held to Maturity(1754) and Securities available for sale(1773)

Notes and known inconsistencies:

! "All Other Bonds, Stocks and Securities" (0380) is the sum of "Other Securities" (0950) + "Trading Account Securities" (1000), and ends in 83:12.

! "Total Investment Securities" (0390) is *net* of assets held in trading accounts. It is the sum of: "U.S. Treasury Securities" (0400) + "U.S. Government Agency and Corporation Obligations" (0600) + "Securities Issued by States and Political Subdivisions in the U.S." (0402) + "Other Domestic Securities" (0421) + "Foreign Securities" (0413). For the pre- and post- 1984 series to match requires: $0900 + 0950 = 0402 + 0421 + 0413$.

! "Trading Account Securities" (1000) reflects the book value of the securities. It becomes a derived item after 84:3, and seems eventually to disappear. "Assets Held in Trading Accounts" (2146), which replaces it and appears in the balance sheet identity, reflects the market value of these securities. If "Total Securities" is defined to include assets in trading accounts, this implies a discontinuity as of 84:3. As of 1994 the definitions are adjusted further to be securities held to maturity and those available for sale. Alternatively, one could

construct a consistent Total Securities series in such a way as to *exclude* assets in trading accounts. This would require subtracting Trading Account Securities (1000) prior to 84:3, and simply using Total Investment Securities (0390) post-84:3 to 93:04 and Securities held to maturity (1254) thereafter.

Unresolved questions:

- ! "Capital Reserves" (3260) (or some portion thereof) appears to be deducted from the various Securities categories beginning in 1984.

Total Loans and Leases

Definition:

1976–83:12 Total Loans and Leases (RCFD1400) + Lease Financing Receivables (RCFD2165)

1984:3–Total Loans and Leases, Gross (RCFD1400)

Notes and known inconsistencies:

- ! Beginning in 84:3, includes "Lease Financing Receivables" (2165).

Unresolved questions:

- ! One can subtract "Lease Financing Receivables" from Total Loans and Leases post-1984, or add it pre-84.

Total Loans and Leases, Net of Unearned Income

Definition:

1976–83:12 Loans, Net of Unearned Income (RCFD2122) + Lease Financing Receivables (RCFD2165)

1984:3–Loans, Net of Unearned Income(2122)

Notes and known inconsistencies:

- ! Loans, Net of Unearned Income (2125) equals: "Total Loans and Leases" (1400) – "Unearned Income on Loans" (2123)

Unresolved questions:

- ! See "Total Loans and Leases (gross)"

Total Loans and Leases, Net of Allowance and Reserve

Definition:

1976–83:12 Loans, Net (RCFD2125) + Lease Financing Receivables (RCFD2165)

1984:3–Loans, Net (2125)

Notes and known inconsistencies:

- ! Loans, Net of Allowance and Reserve (2125) equals: "Total Loans and Leases, Gross" (1400) – "Allowance for Loan and Lease Losses" (3123)
- ! Beginning in 84:3, also nets out "Allocated Transfer Risk Reserve" (3128).

Unresolved questions:

- ! See "Total Loans and Leases (gross)"

Loans Secured by Real Estate

Definition:

1976– Loans Secured by Real Estate (RCFD1410)

Commercial and Industrial Loans

Definition:

1976– Commercial and Industrial Loans (RCFD1600)

Notes and known inconsistencies:

- ! Includes bankers' acceptances
- ! After 84:3, derived as the sum of: "Acceptances of Other Banks" (1755) + "Commercial and Industrial Loans — Other" (1766).

Unresolved questions:

- ! It does not appear possible to construct a consistent C&I Loan series that excludes bankers' acceptances.

Commercial and Industrial Loans — Other

Definition:

1984:3–Commercial and Industrial Loans — Other (RCFD1766)

Notes and Known Inconsistencies:

- ! Excludes bankers' acceptances
- ! Defined as the sum of: 1763 + 1764.

Loans to Individuals

Definition:

1976– Loans to Individuals for Household, Family, and Other Personal Expenditures (RCFD1975)

Agricultural Loans

Definition:

1976– Agricultural loans (RCFD1590)

Balance sheet: liabilities

Total Liabilities

Definition:

1976– Total Liabilities (RCFD2948)

Notes and known inconsistencies:

- ! Includes "Minority Interest in Consolidated Subsidiaries" (3000) beginning in 3/76.
- ! Includes "Subordinated Debt" (3200).
- ! Foreign/domestic breakdown changes in 84:3, and again in 84:9. In 84:3 and 84:6, the domestic component of "Total Liabilities" appears to be reported as RCON2948; the foreign component, RCFN2948, is derived as $RCFD2948 - RCON2948 - RCON2941 + RCON2163$. Beginning in 9/84, the domestic component is reported as RCON3129, and the foreign component, RCFN2948, is derived as: $RCFD2948 - RCON3129 - RCON2941 + RCON2163$. Consolidated foreign + domestic figures should be O.K.

Total Liabilities (net of subordinated debt)

Definition:

1976– Total Liabilities net of subordinated debt (RCFD2950)

Notes and known inconsistencies:

- ! Defined as: "Total Liabilities" (2948) – "Subordinated Debt" (3200).
- ! See notes to "Total Liabilities"

Subordinated Debt

Definition:

1976– Subordinated Debt (RCFD3200)

Total Deposits

Definition:

1976– Total Deposits (RCFD2200)

Notes and known inconsistencies:

- ! For Total Deposits, use RCFD version, which makes the balance sheet add up for the large banks which fill out form 031.

Fed Funds Purchased

Definition:

1976– Fed Funds Purchased (RCFD2800)

Other Borrowed Money & Demand Notes Issued to the Treasury

Definition:

76:3–78:9 Other Borrowed Money (RCFD2850)

78:12–Other Borrowed Money & Demand Notes Issued. (RCFD2835)

Notes and known inconsistencies:

- ! Beginning in 78:12, 2835 is the sum of "Other Borrowed Money" (2850) and "Demand Notes Issued to the Treasury" (2840).

Unresolved questions:

- ! Is it true that Demand Notes Issued to the Treasury didn't exist before 78:12?

Mortgage Debt

Definition:

1976– Mortgage Debt (RCFD2910)

Banks' Liability on Acceptances

Definition:

1976– Banks' Liability on Acceptances (RCFD2920)

Other Liabilities

Definition:

1976– Other Liabilities (RCFD2930)

Notes and known inconsistencies:

- ! Not intrinsically interesting, but balances the balance sheet.

Total Equity Capital

Definition:

1976– Total Equity Capital (RCFD3210)

Notes and known inconsistencies:

- ! Prior to 1984, defined as the sum of: "Preferred Stock" (3220) + "Common Stock" (3230) + "Surplus" (3240) + "Undivided Profits" (3250) + "Capital Reserves" (3260).
- ! Beginning in 84:3, defined as the sum of: "Perpetual Preferred Stock" (3283) + "Common Stock" (3230) + "Surplus" (3240) + "Undivided Profits and Capital Reserves" (3247) + "Cumulative Foreign Currency Adjustment" (3284).
- ! Beginning in 89:?, defined as the sum of: "Perpetual Preferred Stock & Related Surplus" (3838) + "Common Stock" (3230) + "Surplus Not Related to Preferred Stock" (3839) + "Undivided Profits and Capital Reserves" (3247) + "Cumulative Foreign Currency Adjustment" (3284).
- ! "Undivided Profits and Capital Reserves" is the sum of "Undivided Profits" (3247) and "Capital Reserves" (3260).

Unresolved questions:

- ! "Limited Life Preferred Stock" appears in 83:9. Does this mean it didn't exist prior to that time? Or simply that it was no longer treated as Equity Capital? Does this generate a discontinuity in the series?
- ! "Cumulative Foreign Currency Adjustments" (3284) appears in 84:3. Where were they prior to that time? Does this generate a discontinuity in the series?

Limited Life Preferred Stock

Definition:

1983:9– Limited Life Preferred Stock (RCFD3282)

Notes and known inconsistencies:

- ! See notes to Total "Equity Capital"

Demand Deposits

Definition:

1976– Demand Deposits (RCON2210)

Notes and known inconsistencies:

- ! No consistent RCFD series available.

Transactions Deposits

Definition:

1984:3– Transactions Deposits (RCON2215)

Notes and known inconsistencies:

- ! When it appears in 84:3, "Demand Deposits" becomes a memo item on schedule RC-E, and a subset of the "Transactions Deposits" category.
- ! No consistent RCFD series available.

Non-Transactions Deposits

Definition:

1976–84:6– Time and Savings Deposits (RCON2350)

1984:9–Non-Transactions Deposits (RCON2385)

Notes and known inconsistencies:

- ! Includes MMDAs.
- ! RCON2385 appears to take the place of RCON2350 on Schedule RC-E in 84:9. After this time, Time and Savings Deposits (2350) is a derived item, equal to Transactions Deposits (2215) + Non-Transactions Deposits (2385) – Demand Deposits (2210). This seems to imply that some Time and Savings deposits appear in Transactions Deposits (2215).
- ! No consistent RCFD series available.

Unresolved questions:

- ! Check for discontinuity in 84:9.
- ! Does the definition change reflect the base for FDIC assessments?

Amount of Deposits > \$100K

Definition:

1983:6–Amount of Deposits > \$100K (RCON2710)

Notes and known inconsistencies:

- ! No consistent RCFD series available.

Number of Deposit Accounts > \$100K

Definition:

1986:3– ?? Number of Deposit Accounts > \$100K (RCON2722)

Notes and known inconsistencies:

- ! No consistent RCFD series available.

Time Deposits > \$100K

Definition:

1976– Time Deposits > \$100K (RCON2604)

Notes and known inconsistencies:

- ! Defined as the sum of: RCON6645 + RCON6646
- ! Compare with "Amount of Deposits > \$100K" (2710). Difference corresponds to non-Time Deposits > \$100K?
- ! No consistent RCFD series available.

Brokered Deposits

Definition:

83:9– Brokered Deposits (RCON2365)

Notes and known inconsistencies:

- ! No consistent RCFD series available.

Brokered Deposits < \$100K

Definition:

Brokered Deposits < \$100K (RCON2343)

Notes and known inconsistencies:

- ! No consistent RCFD series available.

Brokered Deposits > \$100K Divided Into Units < \$100K

Definition:

Brokered Deposits > \$100K Divided Into Units < \$100K (RCON2344)

Income Statement

Operating Income

Definition:

1976– Operating Income (RIAD4000)

Notes and known inconsistencies:

- ! Beginning in 1984:3, broken down into "Interest Income" (RIAD4107) and "Noninterest Income" (RIAD4079).

Interest Income

Definition:

1984:3–Interest Income (RIAD4107)

Interest and Fee Income from Loans

Definition:

1976– Interest and Fee Income from Loans (RIAD4010)

Notes and known inconsistencies:

- ! Subset of "Interest Income" (RIAD4107). Excludes, e.g., interest from securities.

Income from Fed Funds Sold

Definition:

1976– Income from Fed Funds Sold (RIAD4020)

Notes and known inconsistencies:

- ! Subset of "Interest Income" (RIAD4107).

Total Operating Expense

Definition:

1976– Total Operating Expense (RIAD4130)

Notes and known inconsistencies:

- ! Beginning in 1984:3, broken down into "Interest Expense" (RIAD4073) and "Noninterest Expense" (RIAD4093).
- ! As of 1984:3, excludes Loan Loss Provisions (RIAD4230), which appear to be included prior to that time.

Salaries

Definition:

1976– Salaries (RIAD4135)

Interest on Deposits

Definition:

1976– Interest on Deposits (RIAD4170)

Notes and known inconsistencies:

- ! Prior to 1984, equal to the sum of RIAD4172 + RIAD4174 + RIAD4176. Beginning in 1984, RIAD4176 is replaced by RIAD45?? + RIAD45?? + . . .

Expense of Fed Funds

Definition:

1976– Expense of Fed Funds (RIAD4180)

Furniture, Fixture, Equipment and Auto Expense

Definition:

1976– Furniture, Fixture, Equipment and Auto Expense (RIAD4217)

Loan Loss Provision

Definition:

1976– Loan Loss Provision (RIAD4230)

Net Income

Definition:

1976– Net Income (RIAD4130)

Notes and known inconsistencies:

- ! Equals "Total Operating Income" (RIAD4000) – "Total Operating Expense" (RIAD4130) – taxes – extraordinary items.