Five Important Facts about the Competitiveness of the U.S. Banking Industry

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In December 2021, the Department of Justice (DoJ) requested public comment on whether bank-merger policy should be updated, asking in part (in the accompanying press release) “whether bank merger review is currently sufficient to prevent harmful mergers.”1 The DoJ’s request followed on an Executive Order from the president directing the DoJ to conduct a review of competition policies across all industries, and to do so in consultation with the federal banking agencies for the banking industry.2

The Fact Sheet that accompanied the Executive Order, in addressing commercial banks, emphasized that “excessive consolidation raises costs for consumers, restricts credit for small businesses, and harms low-income communities.”3 But has there been “excessive consolidation” in banking? Have the current guidelines been ineffective at preserving banking market competition?

Five key facts, detailed in this note, clearly demonstrate the contrary—a highly competitive banking environment:

- Nationally, the commercial banking industry concentration is modest compared with other consumer-facing industries.
- National concentration in commercial banking has been trending downward.
- Concentration in U.S. commercial banking is low relative to banking sectors in other advanced economies.
- Local banking market concentration is low on average, with no indication of an increasing trend.
- If the banking industry had in fact evolved to become too concentrated over the last 30 years, then one would expect to see profit margins increasing; to the contrary, evidence shows that profit margins have remained flat in this period.

Moreover, the traditional measures of banking market concentration that support these facts and that are described here do not account for the growing role of FinTech, Big Tech and other nonbanks in providing banking products and services. Data on the provision of payment services and credit products to consumers and small businesses by these nonbank firms aren’t readily available. Such data would offer further evidence of how highly competitive U.S. banking markets are today.

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2 The White House, July 9, 2021, Executive Order on Promoting Competition in the American Economy.
Fact #1: National concentration in commercial banking is modest compared with other consumer-facing industries.

The U.S. Census Bureau carries out surveys every five years of individual establishments in selected sectors, collecting information on each establishment’s economic activity, including output and employment, which can be used to derive industry concentration. The survey covers seven broad industry sectors: manufacturing, retail trade, wholesale trade, services, utilities, finance and transportation, along with numerous subcategories within these. Here, we examine banking industry concentration relative to other industries using data from the most recent survey year, 2017.

For the analysis, we focus on the more granular industry classifications represented by four-digit NAICS codes, which enable us to distinguish the banking industry from all other industries within the finance sector. The sample includes 274 four-digit industries, comprising approximately 80 percent of total U.S. employment. 4

For each establishment in the survey, the Census reports total output, total employment and the assignment of the establishment (and firm to which it belongs) to an industry classification. The exact definition of output varies across industries but is generally intended to capture total sales, shipments, receipts or any business done by the establishment. 5

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4 The banking sector corresponds to the four-digit NAICS code 5221 (Depository Credit Intermediation).

5 For the commercial banking sector, total output includes all revenues from all business activities, including commissions and fees from all sources.
To compare concentration across the various industries that serve U.S. households, we use the share of total sales captured by the top four firms in an industry (denoted CR4). Although total sales is typically not the most common measure used to analyze concentration in the banking sector (e.g., for facts #2 and #3 below, we use total assets), it is one of the most readily available across all U.S. industries. Exhibit 1 presents a bar chart showing the measured CR4 of each four-digit retail sector (31 industries that serve consumers directly). The color-coding of the bars indicates the percentile range to which each industry belongs, based on the full CR4 distribution across all 274 four-digit industry classifications.

The banking industry (broadly defined by the U.S. Census Bureau as including commercial banks, thrifts and credit unions) has a CR4 of 20 percent, indicative of a competitive industry structure. It is located near the bottom of the range across consumer-facing industries and in the bottom half of the distribution across all four-digit industries.

Alternatively, concentration can be compared across industries using employment shares, which are also available for almost all industries. Based on these data, depository credit intermediation appears somewhat more concentrated, with a CR4 of 26 percent. Because some industries appear much less concentrated when measured in terms of employment (the median CR4 across all 274 four-digit industries falls from 22 percent to 13 percent), depository credit intermediation moves closer to the middle across consumer-facing industries and to just within the top quartile across all 274 four-digit industry classifications.

**Fact #2: National concentration in commercial banking has been trending downward for some time.**

Exhibit 2 plots the four-firm (CR4) and 20-firm (CR20) concentration measures for the banking sector between 2002 and 2017. The share of sales of the top four firms increased from 24 percent to just over 26 percent between 2002 and 2007 but has fallen since then to represent only 20 percent as of 2017. Similarly, the top 20 firms show a declining trend in concentration from the 2007 peak of 48 percent, dropping to 40 percent in 2017.

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7 Analogous to the CR4, the 20-firm concentration index is the share of total sales that are captured by the top 20 firms in an industry.
Exhibit 3 plots the share of total assets held by the top five and top 10 banks. This series is published by the Federal Reserve Bank of New York. The share of total assets held by the top five banks has increased between 1991 and 2008, but it also shows a declining trend starting in the first quarter of 2009. The share held by the largest five banks has stabilized around 46 percent in the last few years. The share of total assets held by the top 10 banks shows a similar trend.

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Fact #3: Concentration in the U.S. commercial banking industry is low relative to other advanced economies.

The World Bank publishes a variety of national banking sector characteristics for many economies all over the world. The dataset includes two widely used measures of concentration in the banking sector: the share of total assets held by the top three and top five commercial banks.⁹

Exhibit 4 plots these concentration measures as of 2020 across advanced economies. There are two important results that can be gleaned from the distribution of bank concentration. First, there is a large variability in the commercial banking concentration measures, with five of the seven countries having highly concentrated banking industries. For instance, Canada, France and the Netherlands have top five bank concentration at or above 85 percent. Second, Japan and the United States have the lowest level of bank concentration among advanced economies, at 44 and 46 percent, respectively. So from an international perspective, the level of concentration of the U.S. banking industry is modest.

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Fact #4: Local market concentration has not materially changed since 1998.

The current approach to evaluating the competitive effects of proposed bank mergers, applied by the bank regulatory agencies and the DoJ, focuses on local geographic markets, typically corresponding to metropolitan areas and rural counties. This approach reflects the view that, historically, households and smaller businesses have largely been dependent on local banking relationships.

As is the case with any industry, the DoJ (and the banking agencies) calculate the implied change in the Herfindahl-Hirschman Index (HHI), a commonly accepted measure of market concentration, when assessing the competitive effects of proposed banking mergers in local markets. In the commercial banking context, the HHI measures the extent to which deposits are concentrated at a small number of banks. According to the DoJ’s bank merger guidelines, a merger that does not result in an increase in the HHI of more than 200 points in conjunction with a post-merger HHI exceeding 1,800 in any relevant banking market qualifies for a safe harbor from further DoJ inquiry. Notably, this contrasts with every other industry for which, since 2010, the DOJ has applied a more permissive 200/2,500 HHI standard when assessing the competitive effects of proposed mergers.

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10 The HHI is calculated as the sum of squared market shares of local bank deposits. Deposits of institutions with a commercial bank charter or that are subsidiaries of bank holding companies receive 100-percent weight in computing their market shares. Deposits of institutions with a thrift charter (i.e., savings banks and savings and loan institutions) and that are not subsidiaries of bank holding companies receive 50-percent weight for the initial screening of competitive effects.

11 Proposed mergers that violate these thresholds are subjected to closer scrutiny and are often subject to branch divestiture as a remedy. In the context of conducting closer scrutiny, the HHI may be recalculated with 100-percent thrift inclusion or with 50-percent inclusion of credit union deposits, if this is seen as appropriate based on an analysis of the banking activities of these competitor institutions.
We conducted an analysis of local market concentration trends using an expanded version of the FDIC’s Summary of Deposits (SOD) data that have been supplemented with the Federal Reserve’s banking market definitions. This expanded version, obtained from S&P Global Market Intelligence (SNL Financial), is available annually for 1998 through 2021. The dataset reports total deposits at the branch level for all branches of U.S. banks and thrift institutions, along with identifying the institution, its top parent holding company (if applicable) and the branch location (state, county and banking market).

Following standard practice when using SOD data to examine local banking market concentration, only branch offices identified as “full-service brick and mortar” and “full-service retail” are included in the analysis. Additional filters applied to the data are described in the Appendix.

In addition, a conservative, branch-level deposit cap is applied to address extreme outliers in the data—branches with huge amounts of deposits. These correspond to offices that house non-retail deposits or deposits collected from outside the local market. Specifically, branch-level deposits are capped at nine times the 99th percentile of the distribution of branch-level deposits in a market. These outliers would otherwise have a material and undue influence on weighted average concentration and cause it to be volatile year-to-year.

Market shares of each institution in each locality each year are then calculated and used to calculate the time series of each locality’s HHI of banking market concentration. Aggregated results, with each market weighted by its total deposits, are shown in Exhibit 5. The purple line shows weighted average HHI across local markets by year, measured along the left axis. The yellow line shows the weighted percentage of markets that would be considered highly concentrated based on the DoJ’s current merger guidelines (an HHI exceeding 1,800 points), measured along the right axis. Weighting each local market by its total deposits is appropriate, because unweighted measures reflect the predominance of small markets (many of which are rural), which can support only one or a few banks.

Both concentration measures declined between 1998 and 2019. Weighted average HHI fell from 1349 to 1296, and the percentage of markets that are highly concentrated declined from 18.8 to 13.5 percent.

Between 2020 and 2021, we observe a slight increase in local market concentration, most likely owing to the zero-interest-rate environment and resulting deposit inflows, as well as expansion of deposits to fund reserve balances, offsetting most of the 1998 to 2019 decline. As indicated in statistics released by the Federal Reserve Bank of New York, the growth in deposits was biased toward the largest banks, likely reflecting their broker-dealer activities and their greater balance sheet capacity. As the Fed normalizes its balance sheet and raises interest rates, we expect deposits at the largest banks to fall. Consequently, both aggregate concentration measures would decline.

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12 Recorded deposit amounts are as of June 30 of each year.
13 So, for example, the largest single bank branch in St. Louis, Missouri, belongs to Stifel Bank and Trust, which is identifiable as a custodial bank branch. It has $14.35 billion in deposits, more than 11 times the 99th-percentile branch size for this market.
14 The number of branches subject to the cap ranges from 46 to 65, fewer than one-tenth of 1 percent of the total branch count in any year. In 2021, deposit amounts at the 46 branches subject to the cap range from $10.4 billion to $631 billion.
15 Total deposits are calculated with the cap applied to outlier branches.
16 In addition, more stringent liquidity regulation has increased the incentive for large banks (those with over $250 billion in assets, or with more than $100 billion in assets and $50 billion in weighted short-term wholesale funding) to expand their insured deposit base, since this source of funding receives favorable treatment under liquidity risk measurement standards and resolution requirements.
An alternative approach is to categorize markets into urban, intermediate and rural (as defined in the Appendix) and examine unweighted aggregate trends for each category. This approach is less satisfactory, because it does not address the preponderance of smaller markets within each category and rural markets tend to be sparsely populated. Hence, it tends to overstate the portion of the U.S. population living in less competitive markets. Nonetheless, for completeness, results are shown in Exhibit 6.
The median and the 25th and 75th percentiles for urban markets are slightly lower in 2021 compared with 1998, and intermediate markets show a marked decline in these percentiles. Measures of concentration in rural markets are trending higher, likely reflecting the decline in the number of bank branches, driven by the drop in population in rural counties. Overall, there is no indication that banking markets have become substantially more concentrated using unweighted concentration measures.

It is worth reiterating that this analysis understates the degree of local banking market competition, because it accounts only for competition from banks and thrifts with branches in the relevant geographic market, and excludes the following key contributors to competition:

- Banks and thrifts that serve customers in geographic areas where those banks and thrifts do not have a branch, a phenomenon that has only increased as online and mobile banking tools become more sophisticated;
- Credit unions, which have seen significant growth in the last 20 years, reflecting their expansion of both membership eligibility and the range of products and services they offer;
- Money market funds offering alternatives to bank deposit accounts; and
- Nonbank FinTech companies that offer banking products and services, such as PayPal, Square and Quicken Loans, whose growth has significantly altered the competitive landscape in banking.
**Fact #5:** If the banking industry had in fact evolved to become too concentrated over the last 30 years, then one would expect to see profit margins increasing; to the contrary, evidence shows that profit margins have remained flat in this period.

Another way of assessing the degree of concentration in the banking industry is to analyze the evolution of the share of bank profits over time. If there are concerns that the banking industry is getting overly concentrated, bank profits would be rising over time, since banks would be earning “monopolistic rents.”

A natural way of analyzing the share of bank profits is to calculate the ratio of net income to total assets in the banking industry (results are similar when comparing the share of profits to nominal GDP). The Federal Reserve Bank of New York publishes a variety of banking statistics including the aggregate amount of bank profits relative to assets, also known as the return on assets.

Exhibit 7 shows the ratio of profits to assets between the first quarter of 1991 (the earliest period available) and the third quarter of 2021. Over the long term, the share of bank profits relative to total assets has been stable, averaging about 0.9 percent over the full period.

The ratio of profits to assets was mostly above 1 percent from after the recovery from the 1991 recession until the onset of the global financial crisis. After the crisis, this ratio has slowly risen from about 0.5 percent in the first quarter of 2010 to 1 percent at the onset of COVID. Naturally, during economic recessions, such as the ones experienced in 1991, 2008–2009 and 2020, bank profitability is considerably lower than the average profit share.

The fact that profits in the banking sector have remained steady over the past 30 years is further evidence that the markets have remained competitive and are not overly concentrated.

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17 The average concentration is close to the 75th percentile because of less populated markets that are highly concentrated are being given equal weight as the larger markets.

Exhibit 7: Aggregate Banking Profits

Source: Federal Reserve Bank of New York.
Appendix: Data Preparation for the Analysis of Local Market Concentration

As noted in the main text, only branch offices identified as “full-service brick and mortar” and “full-service retail” are included in the analysis. In the SOD data, these are offices with service type codes 11 or 12. The following additional restrictions are applied:

- Offices for which the FRB market is unknown, corresponding to fewer than 3 percent of bank branches in any given year, are excluded.
- A small number of large, wholesale banks and banks that operate a single branch and serve as deposit custodians for large, nationwide non-bank financial service companies are excluded. These are Stifel Bank, Stifel Trust Co., Delaware NA, Raymond James Bank, Ameriprise Bank, FSB, MetLife Bank NA, Merrill Lynch Bank USA, Scottrade Bank, State Farm Bank FSB, Bank of New York Mellon, State Street Bank and Trust Co., Morgan Stanley Bank NA, and Northern Trust Co.
- The single branch of Capital One, FSB in the Washington, DC market area, present in the sample in 1998 through 2007, and the single branch of U.S. Bank NA in the Sacramento, CA market area, present only through 2001, are excluded. These exhibit highly volatile deposits, including extreme outlier observations in some years.
- Eight markets with extremely volatile market deposits over time are excluded. These include Wilmington, DE, and Sioux Falls, SD, which have many special-purpose banks serving a national market. The others are metro Columbus Area, GA; Columbus, IN; Las Vegas, NV; Ogden, UT; Red Wing, MN; and Winston-Salem, NC. The latter are characterized by outlier branches that are present only in some years or by an extremely skewed distribution of branch sizes in some years (such that the 99th percentile is more than 15 times the size of the 95th percentile).

Results are not materially affected by these exclusions.

For the calculations shown in Exhibit 6, the following classification of banking markets into urban, rural, and intermediate, based on U.S. Department of Agriculture classifications of rural and metropolitan counties, was applied. A banking market was defined to be urban if at least one branch in the market is in an urban county (a metropolitan area with population ≥ 250,000). A banking market was defined to be rural if no branch in the market is in a metropolitan area. All other markets are classified as intermediate. Using this classification there are 312 urban markets, 910 rural markets, and 181 intermediate markets.

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