The Case for a State Bank of Florida (SBFL)

Business and Economic Case

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Contents

LIST OF ACRONYMS

AWS:	Amazon Web Services
BDC:	Bank digital currency
BIS:	Bank for International Settlements
BND:	Bank of North Dakota
C&I:	Commercial and industrial
CBDC:	Central bank digital currency
DSGE:	Dynamic stochastic general equilibrium (macroeconomic model)
FDIC:	Federal Deposit Insurance Corporation
FRBA:	Federal Reserve Bank of Atlanta
FSG:	Florida State Government
GDP:	Gross domestic product
KfW:	Kreditanstalt für Wiederaufbau
MBLTBL:	Micro business loans to total business loans (ratio)
MSA:	Metropolitan statistical area
NBFI:	Non-banking financial institution
NCUA:	National Credit Union Administration
NDCC:	North Dakota Century Code
OECD:	Organisation for Economic Co-operation and Development
QTDC:	Quantity theory of disaggregated credit
R&D:	Research and development
RoE:	Return on equity
SBFL:	State Bank of Florida
SBL:	Small business lending
SME:	Small and medium-sized enterprise
USD:	U.S. dollar

Executive Summary

This document presents to state legislators in Florida the case for setting up a State Bank of Florida (SBFL). SBFL would act as a second-tier bank, interposed between the Federal Reserve Bank of Atlanta (FRBA) and the Florida State Government (FSG) on the one hand, and small banks (community banks, credit unions, etc.) operating in Florida on the other. The goal of SBFL is not to compete with small banks for loan and deposit market shares, but to support them with loan participations and purchases, as well as other forms of backup as a larger, state-owned bank that is tasked to ensure the future of a diverse banking sector and thriving small banks in Florida. Because small banks and small firms depend on each other in a symbiotic relationship, setting up SBFL would support small businesses in Florida in gaining access to funding and deposit markets, thus helping the economy of Florida.

Here are some of the key takeaways:

- **Minimal cost:** Setting up SBFL would cost less than 0.43% of the State of Florida's annual expenditures for FY 2024. However, notably, the founding funds would not need to come from the annual budget but can be procured from capital expenditure or reserve accounts, since they represent a profitable investment that will bring returns.
- **Dividends:** The founding contribution would be a one-off investment, after which the SBFL would be able to stand on its own feet and, after an initial launch period, would pay handsome dividends to the State of Florida, since banking is generally one of the more profitable business lines.
- **Productive lending:** SBFL would expand the amount of funding available to Florida's 66 community banks (defined as those with total deposits <$1 billion and with >50% of their deposits booked in Florida) by 20% over the course of its first 10 years of operation. Since small bank lending tends to be allocated for productive purposes (business investment), the additional lending will be non-inflationary, and it will increase GDP and tax revenues. This is why countries with many small banks are often able to achieve high economic growth in the long run.
- **Support for community banks:** SBFL will not compete for deposit or loan market shares with community banks; rather, it will provide them with funding in the form of loan purchases and loan participations in larger volume lending operations. Other forms of support are also provided.
- **Support for state government:** SBFL will act as depositary for the Florida State Government. It will also be able to provide funding to the FSG, enabling a higher effectiveness of fiscal policy (than if public borrowing is undertaken via bond issuance).

- **Number of community banks:** The number of community banks in Florida has fallen by 80.9% since 1990. The Florida banking system is now relatively concentrated: 10 banks account for 67.9% of the deposit market (above the U.S. average of 60%). North Dakota, thanks to its state-owned bank, has avoided such high concentration of its banking system.
- **Bank concentration:** Banking system concentration is bad for small firms, which depend on bank funding and particularly on bank loans from small banks ("community banks").
- **Existing precedent:** SBFL will follow the example of the Bank of North Dakota, the only example of a U.S. state-owned bank that helps community banks with funding.
- **State sovereignty:** SBFL would counter the recent move by the Federal Reserve of exploring the introduction of a USD central bank digital currency (CBDC, or "Digital Dollar"), which could adversely affect the capacity of banks to fund themselves with deposits and trigger deposit outflows from private bank deposits into the central bank balance sheet to CBDC accounts.
- **Timing:** The era of zero to negative interest rates is over, providing a good environment for setting up new banks.

I. Introduction

This memorandum contains the proposal for the set-up of a State Bank of Florida (SBFL), a second-tier state-owned bank designed to act as depositary for the Florida State Government (FSG) and community banks in Florida, as well as provide them with funding in the form of loans and bonds in the case of FSG, and loan purchases/participations in the case of community banks.

The SBFL is modeled after the example of the Bank of North Dakota (BND), a conservative yet highly successful bank owned by the state of North Dakota that has helped community banks provide funding to small and medium-sized enterprises (SMEs). Although it has played various roles since its founding in 1919, BND's most important role (as of 2011) is serving as a lending partner for North Dakota's numerous small banks. Over half of BND's current loan portfolio consists of loan participations and loan purchases from community banks. Student loans account for most of the remainder (Kodrzycki and Elmatad, 2011).

The rest of this memorandum makes the economic case for SBFL.

In Section II, the importance of small community banks for the economy is described, particularly via their impact on the financial health of small non-financial firms. This section also considers developments in the structure of the U.S. banking system from a historical perspective, including the state of Florida.

Section III describes the essential model of a sovereign bank.

Section IV describes the benefits of establishing the State Bank of Florida for the economy and people of Florida.

Section V shows the benefits of the State Bank of Florida from a risk management perspective to counteract current tendencies.

Section VI reviews the history of state banks in the U.S. and elsewhere.

Section VII shows some academic work on the benefits of local, productive, bank-based lending for GDP growth and for avoiding asset bubbles.

Section VIII describes the proposed solution, how SBFL would work, and the benefits it would bring to Florida.

II. Community Banks and the U.S. Economy

The Importance of Small Businesses

Today's globalized economies may seem to be dominated by large corporations, but this is only true in a specific sense. In the U.S., small businesses account for 99.9% of all businesses by number, 64% of the new net jobs created every year, 46.4% of all employment (Main, 2022), and 44% of GDP (Zhou, 2023). Similar results are found in other countries. In most OECD countries, SMEs account for 30% to 70% of value added, 15% to 50% of exports, 60% to 70% of employment, and for a disproportionately large share of new jobs (OECD, 1997, p. 8).

Perhaps most strikingly, SMEs are the biggest net job creators. According to the International Labor Office (2015, p. 9), young enterprises, especially young SMEs, "create a disproportionately high number of jobs." The report is referring to the fact that they create more jobs than are warranted by looking at their share of employment. And not only do they create more jobs, they also destroy fewer jobs, being strong net job creators. The report adds (p. 9):

> *"Although young enterprises respond more strongly to economic upturns or downturns than old enterprises, they remained net job creators during the Great Recession of 2007–09. Most of the job losses were caused by contractions of mature businesses."*

Figure 1 is taken from that same report.

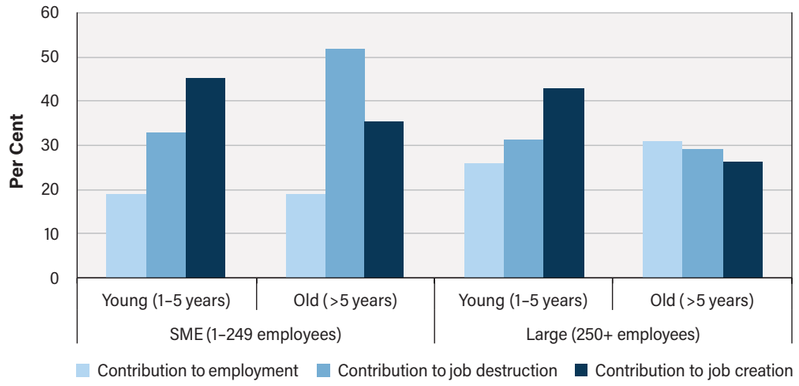


Figure 1: Employment, job creation, and destruction by enterprise age and size. OECD sample (2001–2011)

Source: International Labor Office (2015, p. 10, Fig. 2.6)

While it is true that young enterprises are "less likely to survive than older enterprises," despite this risk they deliver for the economy because "the surviving young enterprises tend to have higher employment growth rates" (De Kok et al., 2011, p. 8). It is fast-growing SMEs that make the bulk of the contribution to job creation.[1] According to that source, newly born enterprises add 17.5 jobs per 1,000,000 population on net, while established enterprises actually destroy –4.2 jobs on net.[2]

Since it is agreed that the younger firms face a more precarious future, what can be done to reduce their risk of failure? Research by the Federal Deposit Insurance Corporation (FDIC) has shown that the likelihood of survival of start-ups increases with their access to credit (FDIC, 2018, p. 45).

The Importance of Community Banks for Small Businesses, and Vice Versa

Getting external funding is not easy for SMEs. This is for various reasons. Unlike large firms, SMEs cannot access regulated capital markets at an affordable cost, for fees are much higher for small denomination issues (European Parliament, 2019, p. 2).[3] Being unable to access capital markets, SMEs turn to banks as their only alternative for external funding of substantial amounts (SMEs tend to borrow from family and friends, but the amounts tend to be smaller, naturally) (OECD, 2018, p. 10). As a result, banks are the most common source of external funding for small businesses (FDIC, 2018, p. 18).

According to the Federal Reserve's Availability of Credit to Small Businesses report (Board of Governors of the Federal Reserve System, 2022, p. 30):

> *"[S]mall businesses remain most reliant on banks for credit, as they overwhelmingly apply to banks more often than any other type of formal lender. Among businesses that applied for new credit in 2020, approximately 68% applied to a bank."*

But banks, like most lenders, typically ask for collateral[4] to reduce the loss given default of the borrower. It is estimated that around 50% to 70% of loans to non-financial firms are collateralized. However, unlike larger firms, SMEs often do not have good quality collateral to offer (Degryse, Karapetyan and Karmakar, 2019, p. 1).

Figure 2 shows data for U.S. banks. For large denomination loans, the collateralization ratio (defined as the collateral posted as a percentage of the loan principal amount) is much lower compared to small or micro loans.

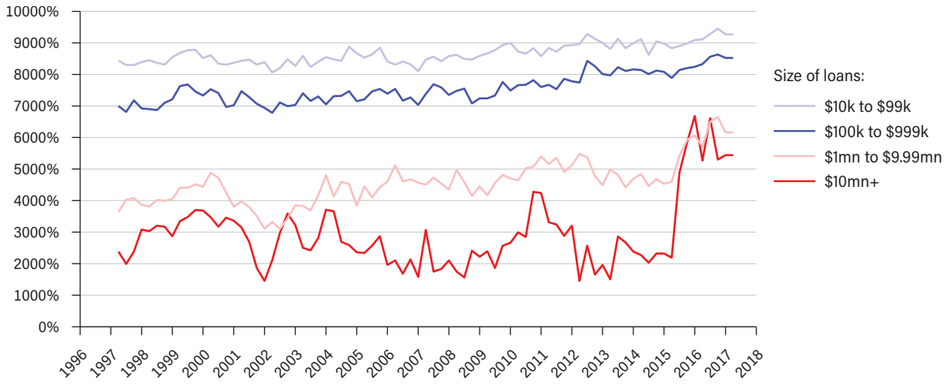


Figure 2. Percent of value of bank loans secured by collateral, by size of loan. All commercial banks in the U.S.

Source: FRED (St. Louis Fed)

As a result, banks prefer to deal with larger firms (Brown and Lee, 2014, p. 9; OECD, 2018, p. 6). When they lend to small firms, banks tend to charge SMEs higher interest rates to compensate for the collateral problem (OECD, 2018, p. 8) compared to large firms with better collateral or a longer credit history or a credit rating (see Figure 3). In the OECD countries, in 2008, the median interest rate charged to SMEs was 15.5% higher than the rate charged to large enterprises, whereas in 2016, that percentage had more than doubled, standing at 32.7% (OECD, 2018, p. 8). In addition, SME loan applications are rejected more frequently (European Commission, 2009).[5]

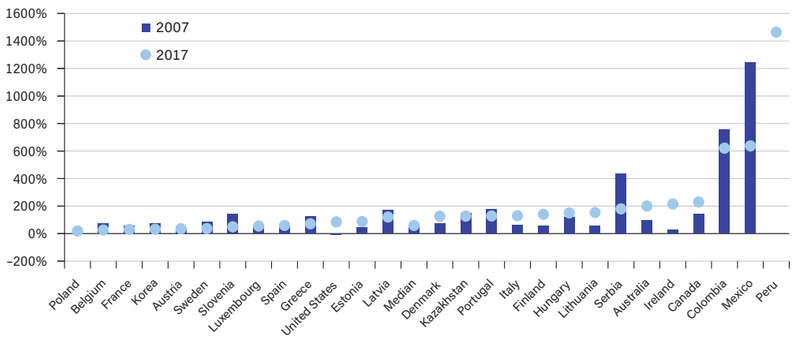


Figure 3. Interest rate spreads between loans to SMEs and to large firms

Source: *Financing SMEs and Entrepreneurs: An OECD Scoreboard 2020* © OECD 2020

Despite the fact that SMEs are reliant on bank loans to a greater extent than larger firms, the unattractive terms at which banks agree to lend to them result in SMEs applying less frequently and therefore receiving fewer loans relative to larger firms. Many SMEs are known to be discouraged from applying in the first place, and some of them never attempt to borrow from banks. Evidence from the U.S. suggests that borrower discouragement is prevalent across SMEs (Levenson and Willard,

2000; Han et al., 2009), and younger and smaller firms are much more likely to be discouraged borrowers (Han et al., 2009).

Small banks are more flexible in underwriting start-up loans (FDIC, 2018, p. 45). For example, whereas 69.8% of large banks require a minimum loan amount for their loans to small businesses, only 14.8% of small banks do. Similarly, the percentage of large banks offering standardized lending products to small firms is 64.7%, whereas the figure for small banks is 8.4% (FDIC, 2018, p. 44). Small banks also tend to approve more loans to small businesses compared to larger banks (Board of Governors of the Federal Reserve System, 2022, p. 35).

As a result, small banks ("community banks"[6]) tend to have small businesses as their counterparties, both as borrowers and as depositors. While big banks tend to deal with bigger customers, small banks tend to deal with smaller counterparties (Mkhaiber and Werner, 2021).

This is shown in Figure 4. The larger the size of the bank, the lower the share of smaller denomination loans in its total business loan portfolio, and the higher the average size of loans.

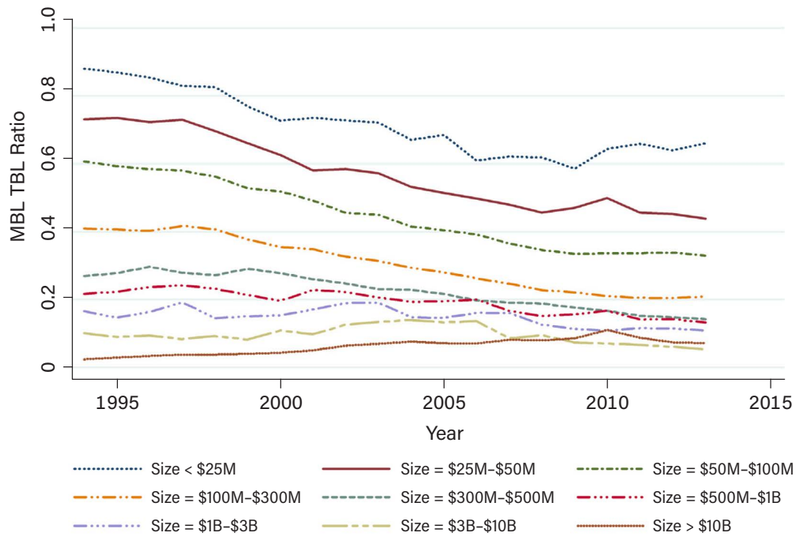


Figure 4. Ratio of micro business loans to total business loans. Each line represents the lending propensity of each of nine bank size groups over the period from 1994 to 2013 in the U.S. The lending propensity to micro businesses is computed as the ratio of Micro Business Loans to Total Business Loans (MBLTBL) for each size group.

Source: Mkhaiber and Werner (2021)

Figure 5, in turn, shows the results of the FDIC's *2018 Small Business Lending Survey*. According to it, 86.4% of the smallest banks (banks with less than $250 million in assets) make commercial and industrial (C&I) loans almost exclusively to small businesses.

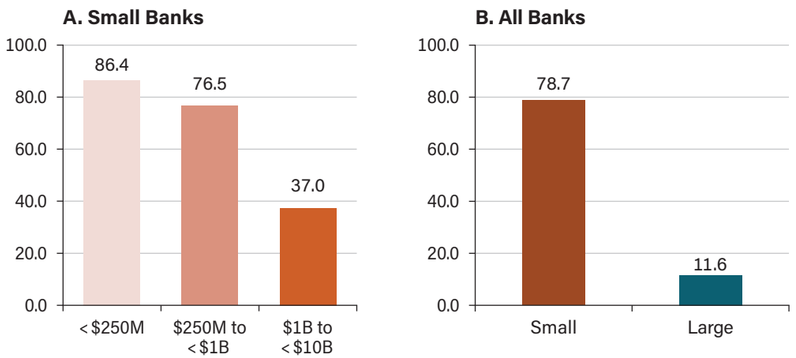


Figure 5. Percentage of banks that make "largely all" of their commercial and industrial (C&I) loans to small businesses

Source: Federal Deposit Insurance Corporation (2018)

Finally, Figure 6 shows the geographical focus of small banks and large banks; whereas 75% of small banks operate at the level of individual counties, the figure for large banks is only 20.5%, and around 60% of large banks operate either at a national or state level.

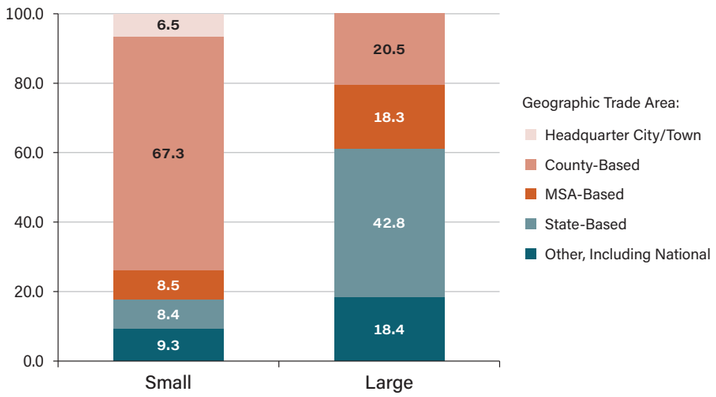


Figure 6. Geographical trade areas of small and large banks

Source: Federal Deposit Insurance Corporation (2018)

A further way to corroborate this is to check how banking system concentration (measured by, for example, the share of banking system assets held by the five biggest banks) correlates with various measures of SMEs' capacity to access finance and the terms on which they access it. Some are shown in the graphs in Figure 7. As can be seen, in more concentrated banking systems, relative to bigger firms, SMEs tend to apply less for bank loans, their loan applications get rejected more often, and they get charged higher interest rates. As a result, the share of SME loans in total bank loans is smaller the more concentrated the banking system.

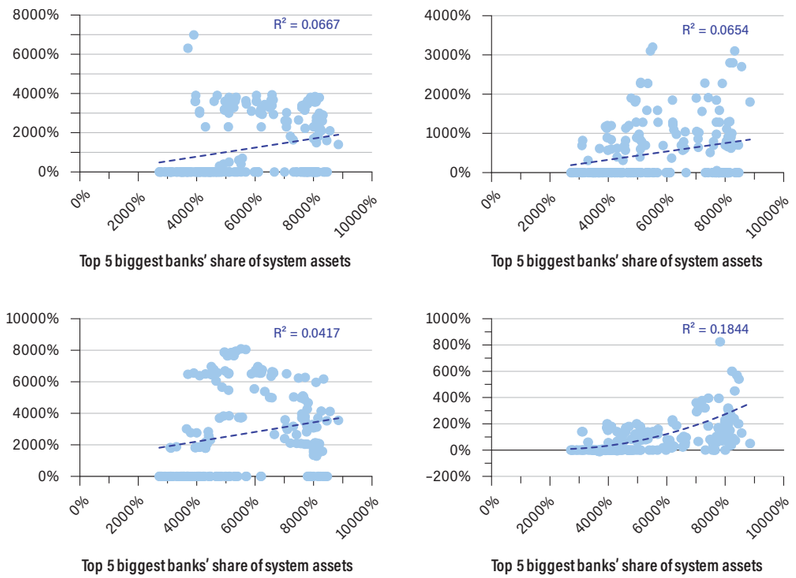


Figure 7. Top five biggest banks' share of system assets. Data are for 15 OECD countries (2007–2016) and 45 countries (2006–2017).

Sources: 15 countries: OECD.Stat, *Financing SMEs and Entrepreneurs: An OECD Scoreboard*; 45 countries: World Bank (2019), *Global Financial Development Database*. Complementary sources: BIS; SME Finance Forum.

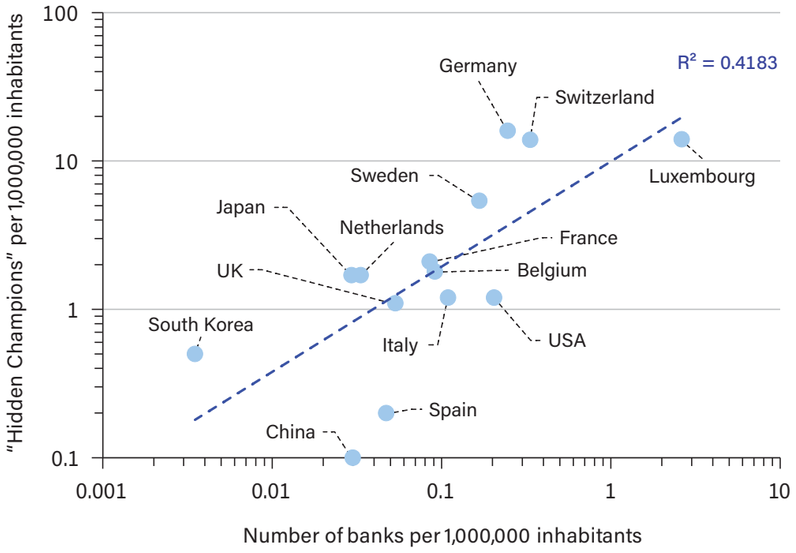


Figure 8. Number of hidden champions (vertical axis) and number of banks (horizontal axis) per 1,000,000 inhabitants. Data are for 2014

Sources: Simon, Kucker & Partners; BIS

The benefits of having a large, diverse demography of banks extend beyond facilitating access to finance. The empirical evidence suggests that having a high number of banks per capita—which effectively means having a large share of the banking sector being composed of small local community banks—correlates with having a high number of highly competitive SMEs (called "hidden champions" in the case of the most successful ones) that are world leaders in their respective export markets. This is shown in Figure 8. Hidden champions are firms that hold a top-three market share in the world in their respective market niche, called "hidden" because they are small and largely unknown outside their niche industry.

The case of Germany is illuminating. It is the country with the highest number of hidden champions, both in absolute terms (1,300+) and per capita (16 per 1,000,000 residents) as of 2014. German export competitiveness in the 70 years to 2022 is widely known. Less known is the fact that Germany was until recently home to some 1,500+ banks (the highest number in Europe). Around 70% of these banks are locally controlled, small, not-for-profit community banks.[7] These small banks lend locally and to local SMEs, which account for a large bulk of German exports.

Small banks have predominantly local trade areas for small business lending. As shown in Figures 9 and 10, small banks focus on the city where they are headquartered (6.5%), on counties containing or near their branches (67.3%), or on metropolitan statistical areas (MSAs) containing or near their branches (8.5%). Combined, 82.3% of small banks selected one of these local options. Large banks generally spread their resources across larger geographic areas than small banks, and their activities are often more concentrated on other financial services than business loans. Nevertheless, a substantial minority of large banks is, like small banks, locally focused. Large banks that describe their market area as at the state level constitute the largest share (42.8%) of large banks, and up to an additional 18.4% focus on the national level.

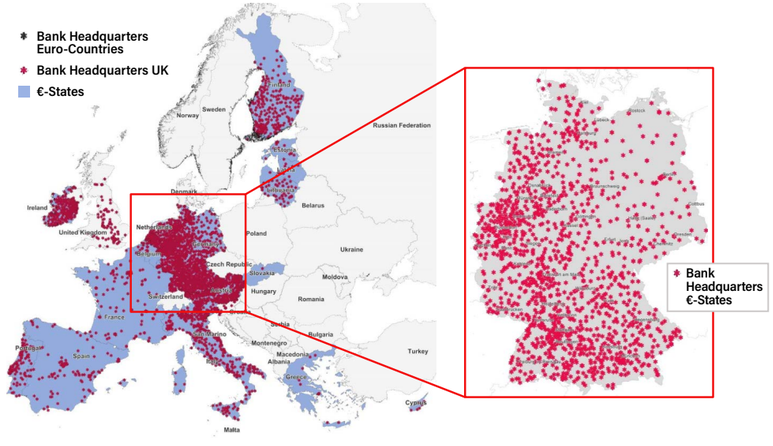


Figure 9. Bank headquarters

Source: Adapted from Gärtner and Fernandez-Montoto (2018)

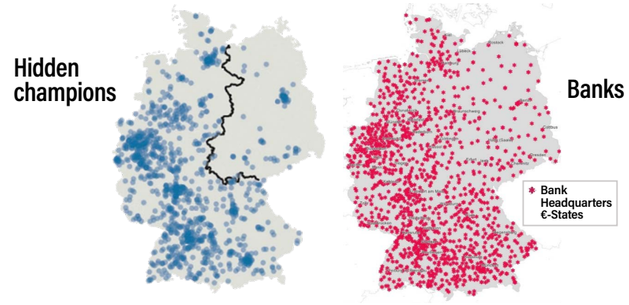


Figure 10. Geography of hidden champions and bank headquarters

Sources: Adapted from Hidden champions: *The Economist*; bank headquarters: Gärtner and Fernandez-Montoto (2018)

This is especially true in sparsely populated areas, where small banks tend to account for a higher share of deposits (Kodrzycki and Elmatad, 2011).[8] This can be appreciated in Figures 11 and 12.

According to the Council of Economic Advisers (2016):

> *"Community banks play a key role in local access to banking services. About 1 in 4 counties rely exclusively on community banks for brick-and-mortar services within county lines. Almost half of rural counties have only community banks under the broad definition (under $10B in assets), with about 10 percent of these counties having only a single community bank office, or about 5 percent of rural counties overall."*

In fact, there is compelling evidence that the destinies of small banks and small firms are tied together (Brennecke, Jacewitz and Pogach, 2020). According to Brennecke et al. (2020):

> *"Small banks disproportionately rely on small businesses as a core part of their business model. As firms in real industries consolidate, due to technological advancement, economies of scale, or monopolistic rents, the smaller firms that form the foundation of small banks' relationship-lending business model gradually disappear. With fewer borrowers, small banks face a lower demand for their relationship-based loan products, leading to a reduced small bank presence."*

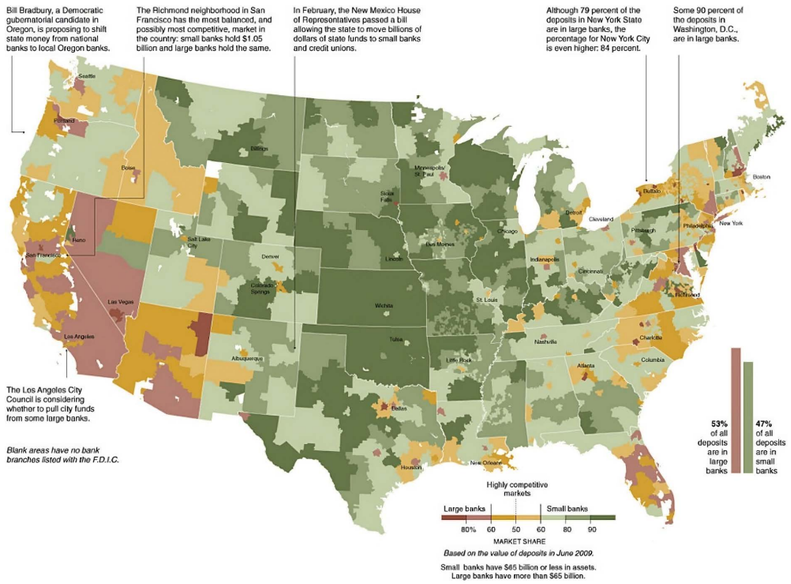


Figure 11. Share of deposits held with large banks (red) and small banks (green)

Source: *The New York Times* (2010)

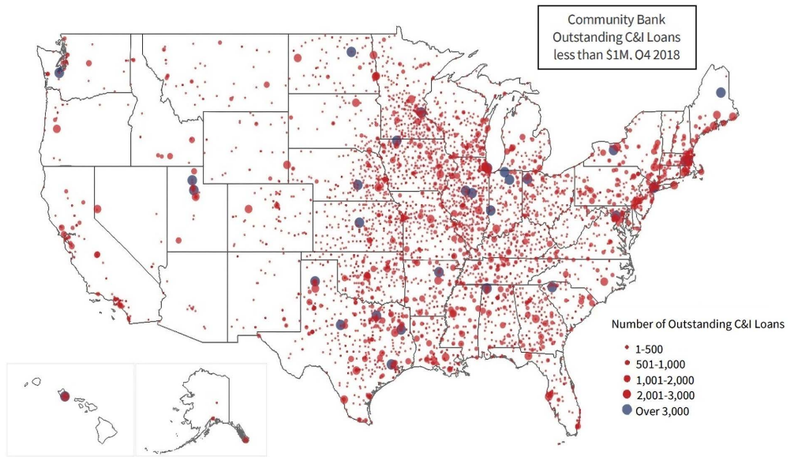


Figure 12. Outstanding commercial and industrial (C&I) loans of less than $1mn granted by community banks, as of Q4 2018

Source: Brown (2019)

Conversely, community bank disappearance through mergers tends to reduce lending to small businesses. According to Jagtiani and Maingi (2019), who researched the impact of a declining community banking sector, usually due to mergers, on local small business lending (SBL):

> *"From all mergers that involved community banks, we examine the varying impact on SBL depending on the local presence of the acquirers' and the targets' operations prior to acquisitions. Our results indicate that, relative to counties where the acquirer had operations before the merger, local SBL declined significantly more in counties where only the target had operations before the merger. This result holds even after controlling for the general local SBL market or local economic trends. These findings are consistent with an argument that SBL funding has been directed (after the mergers) toward the acquirers' counties. We find even stronger evidence during and after the financial crisis. Overall, we find evidence that local community banks have continued to play an important role in providing funding to local small businesses. The absence of local community banks that became a target of a merger or acquisition by nonlocal acquirers has, on average, led to local SBL credit gaps that were not filled by the rest of the banking sector."*

There is other evidence concerning the crucial role of small banks, as presented in Figures 13–15. Figure 13 shows that there is a strong correlation between the share of total employment accounted for by small firms and the share of the total deposits issued by small banks. In a similar vein, Figure 14 plots the share of loans of denominations less than $100,000 in all loans (green), and the share of community banks in the loan market (red), again showing a clear positive correlation. The relationship between banks, small businesses' share of GDP, and small-firm share of total employment is also evident in Figure 15.

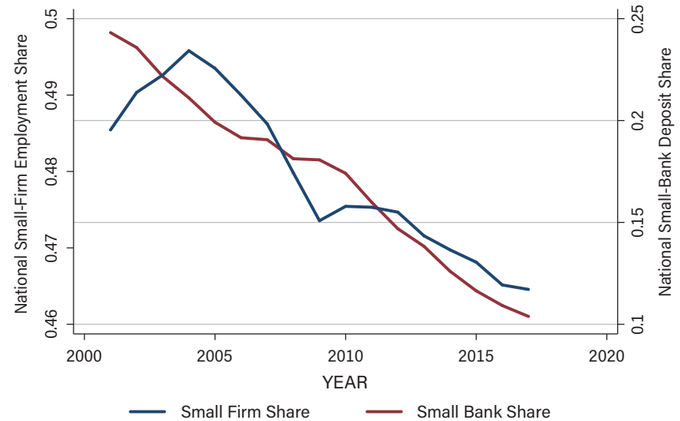


Figure 13. Average national changes in the small firm employment shares (blue) and small bank deposit shares (red) across counties

Source: Brennecke et al. (2020)

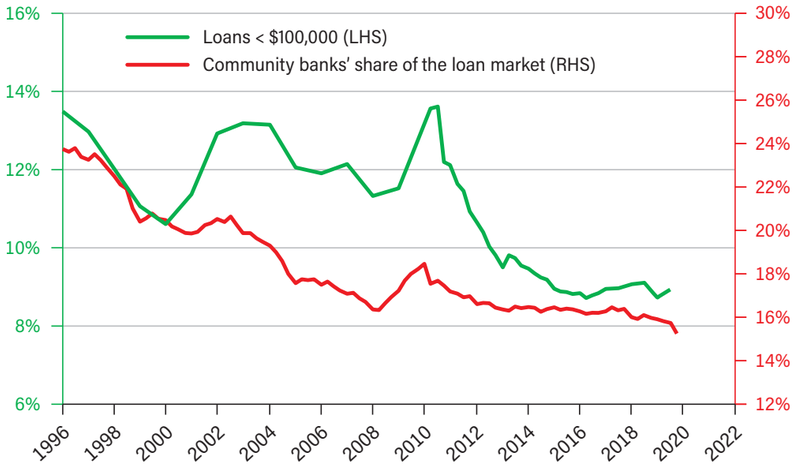


Figure 14. Market share of community banks in total bank lending in the U.S. (red) and the share of commercial and industrial (C&I) loans of denominations below US $100,000 in total C&I loans (green)

Source: FDIC

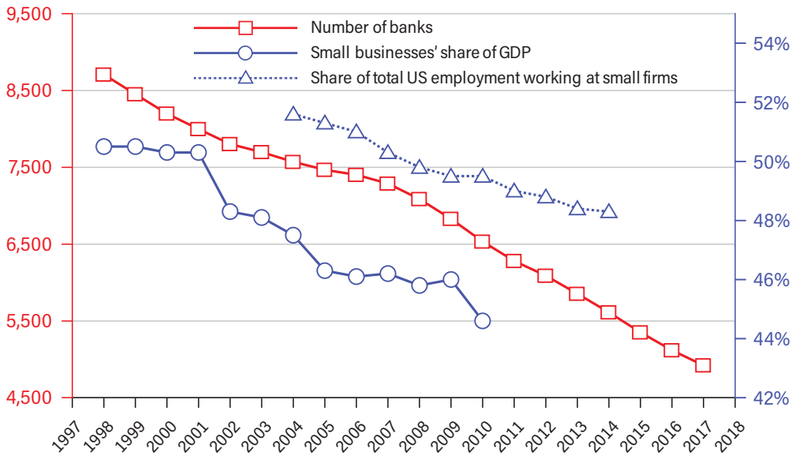


Figure 15. Number of banks (red), small businesses' share of U.S. GDP (blue), and share of total U.S. employment working at small firms (discontinuous blue)

Source: JP Morgan Chase; FDIC

As a response to this, community banks have shifted their loan portfolios increasingly to real estate loans since the 1980s to a greater extent than big banks.[9] Two important reasons for this seem to be, first, collateral is easier to obtain, and second, the real estate sector is "less associated with relationship lending" (Brennecke et al., 2020).

Developments in the U.S. and Florida Community Banking Sector

Unfortunately, the number of banks in the U.S. has been in a decades-long downward trend, as shown in Figure 16. Since the 1990s, the banking industry has been on a path of consolidation, a process that was somewhat halted after the great financial crisis of 2008–09, but not reversed (Figure 17). As has been shown above, banking system concentration is generally bad for small businesses. The start of the drop in 1985 also coincided with the trade deficit in the U.S. becoming a structural problem.[10] As a result, the drop in the number of banks is almost fully accounted for by a drop in the number of community banks (Figure 18).

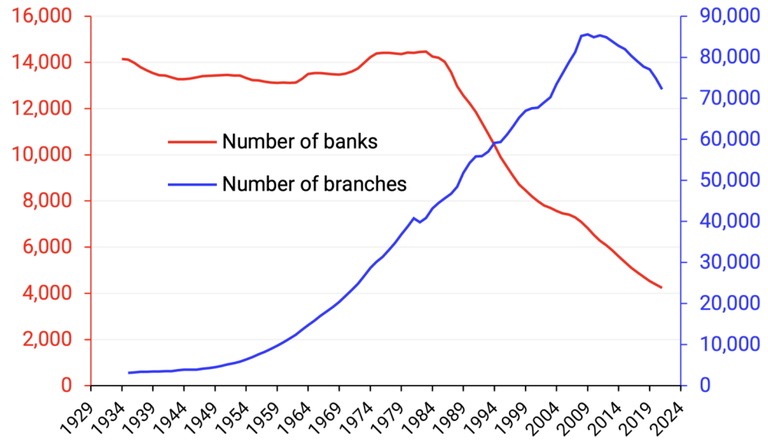


Figure 16. Number of banks (red) and branches (blue) in the U.S.

Source: FDIC

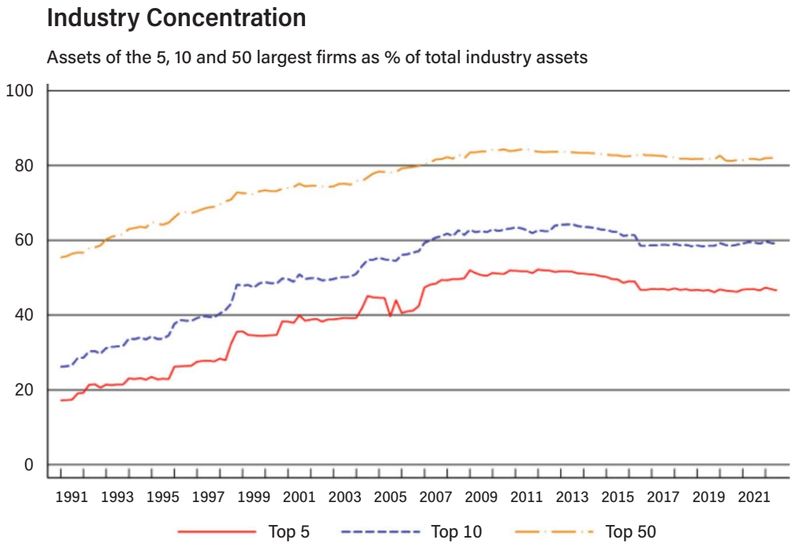


Figure 17. Banking industry concentration, % of assets of biggest banks

Source: Federal Reserve Bank of New York, *Quarterly Trends for Consolidated U.S. Banking Organizations* (2022)

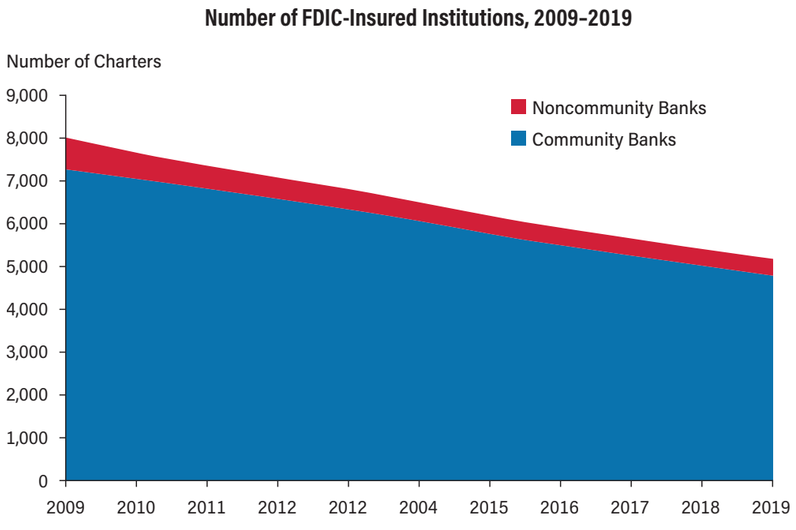


Figure 18. Number of banks (community and non-community) in the U.S., 2009–2019

Source: FDIC (2020)

This pattern is also present in Florida (Figure 19), although with large swings in the intervening years. The number of banks increased dramatically in the post-WWII period until it peaked in 1976 (Figure 20); from that point onward, it fell relentlessly, even below the 1934 level.

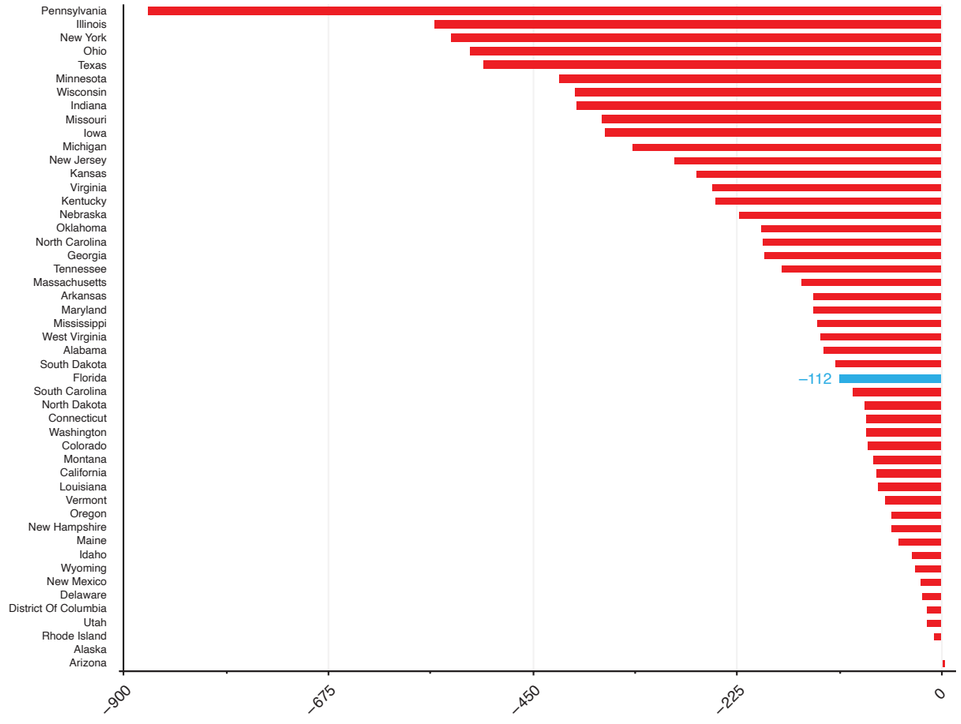


Figure 19. Change in the number of banks in the U.S., 1950–2023

Source: FDIC

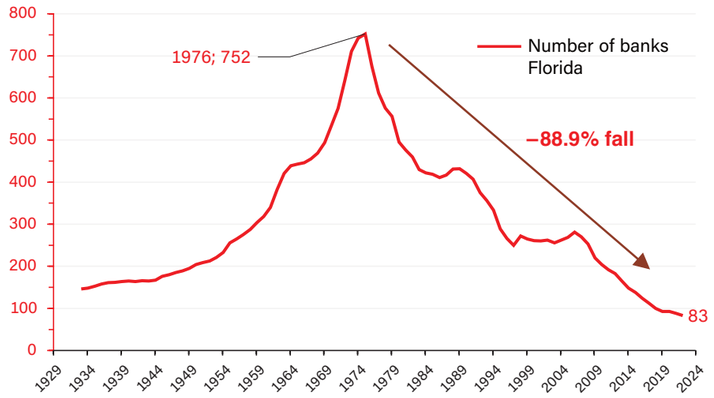


Figure 20. Number of banks in Florida, 1934–2023

Source: FDIC

As described next, this contraction is due to two factors:

- The lack of entry of new community banks into the market (new bank charters).
- The disappearance of existing community banks.

Lack of Entry

Since the financial crisis of 2008–09, the number of new bank charters has been muted; that is, very few new banks have entered the market.

One of the reasons for the lack of entry is lower interest rates. According to Adams and Gramlich (2014):

> *"Interest rates are known drivers of banking profitability, and regression results suggest that these rates—plus other non-regulatory influences such as weak banking demand—are likely to have caused 75-80% (or perhaps even more) of the current decline in new charters."*

Figures 21 and 22 show the number of new charters per year in the U.S. and Florida and the Fed funds rate. Since short-term interest rates rose in autumn 2022, we are likely to see more bank charters.

Mergers

The three primary ways a bank exits the market are mergers (through both consolidation and acquisitions), failures, and liquidation. Figure 23 shows that much of the exit in 1994–2014 occurred in the form of mergers with other community banks, underscoring that many are thriving. The number of bank failures rose in 2008 and 2009 as the Great Recession took hold before starting to drop off, and the number of failures are now roughly in line with those in the decades prior to the Great Recession. The fraction of mergers between community banks that join them with other community banks has risen from almost 40% in 1994 to 65% in 2014.

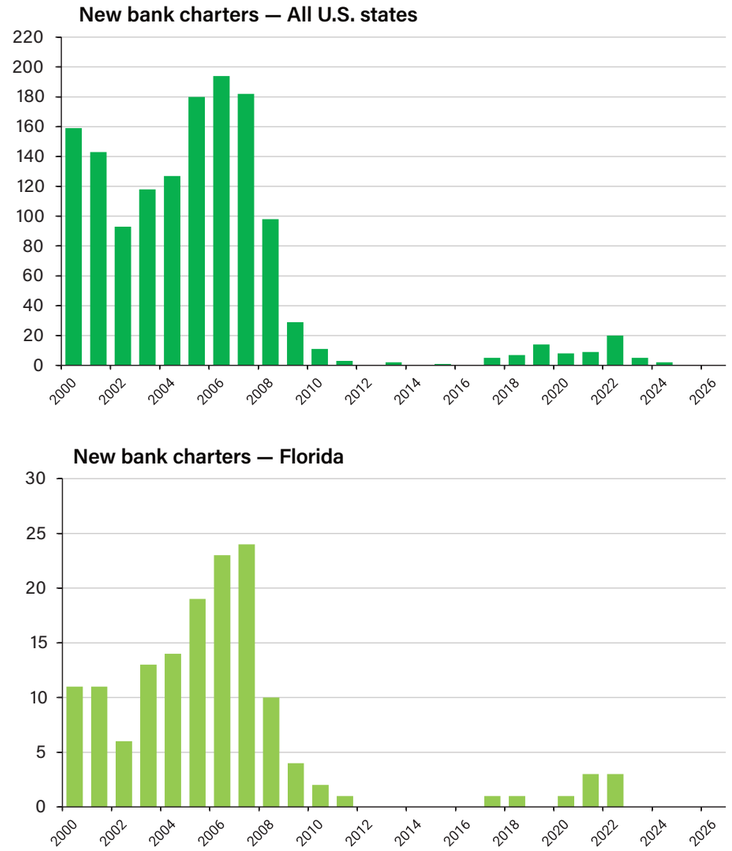


Figure 21. New bank charters per year in the U.S. (top) and in Florida (bottom)

Source: FDIC

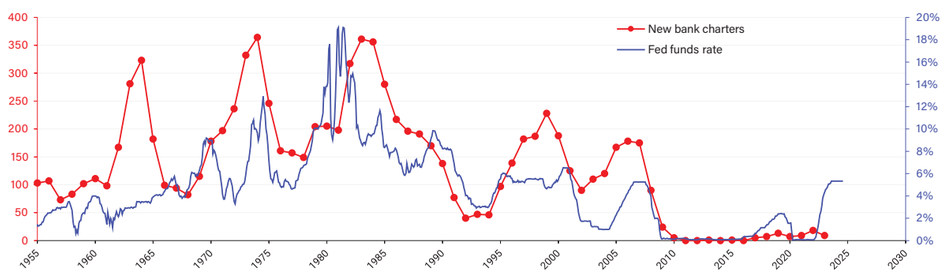
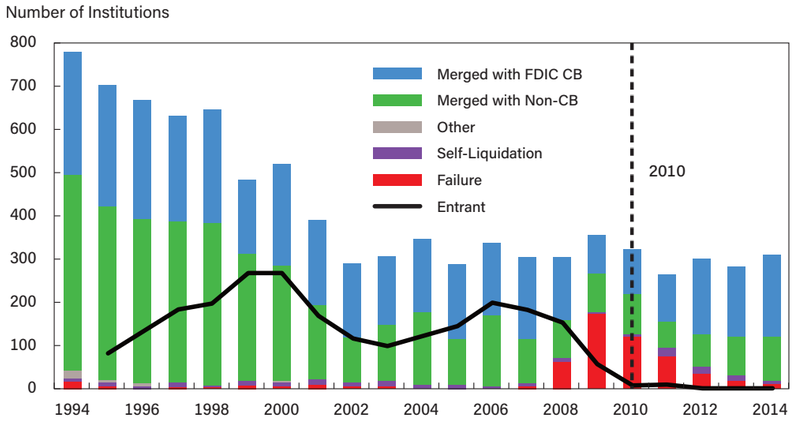


Figure 22. New bank charters per year (red) and Fed funds rate (blue)

Sources: FDIC; FRED



Notes: Merger is a consolidation or acquisition. Entrant is a new FDIC certificate.
Source: FDIC (June, Qtr 2) Deposit Insurance, FDIC (2012) definition of a community bank.

Figure 23. Reasons for exit of banks with total assets < $10 billion

Source: Council of Economic Advisers (2016)

The largest contributor to negative growth in the number of banks in the smallest size category was increasing asset class—banks moving up to a larger asset class (Council of Economic Advisers, 2016). The reason for this has been debated in the literature. One compelling explanation, put forth by Brennecke et al. (2020), is that consolidation in the banking industry is at least partially driven by "consolidation on the real side of the economy." This is consistent with the evidence presented earlier; the destinies of small banks and small firms are shared (Brennecke et al., 2020). As the economic footprint of small businesses in the U.S. decreased over 1998–2015, so did the number of banks. As we have seen, the bulk of the reduction in the number of banks can be attributed to the decreasing number of community banks. However, given the banks' role in funding small firms, the causation is overall more likely to run from bank consolidation to industry consolidation.

What has been driving bank consolidation? Firstly, central bank interest rate policies. Since 2008, the Federal Reserve (and other central banks) have embarked on an unprecedented low interest rate policy that has lasted for longer than ever before. This has squeezed bank margins and forced banks to merge, while discouraging the creation of new banks (see above).

Secondly, since about the same time period, regulators have significantly increased bank regulation and reporting requirements, as well as increasing the complexity of bank regulation and interaction with the regulators. While the U.S. has benefited from the fact that small banks mostly did not have to meet the Basel III newly introduced international standards (unlike in Europe, where even the smallest community banks have had to meet them), the tightening of regulatory standards and the increase in regulatory burdens has been a key factor driving the consolidation of the U.S. community bank sector.

III. What Is a Sovereign State Bank with a Bullion Depository?

A sovereign state bank is generally understood as a for-profit commercial bank that is majority-owned by the public sector, either by the central government (e.g., the U.S. Federal Government) or some other governmental level like a state or a local government (e.g., county-level).

There are at least two types of government-owned banks:

- Upper-tier banks, which compete with larger banks and act as intermediaries between the government and the central bank on the one hand, and smaller banks on the other.
- Lower-tier banks, which compete with smaller banks and have households and non-bank firms as their customers.[11]

This is shown in Figure 24.

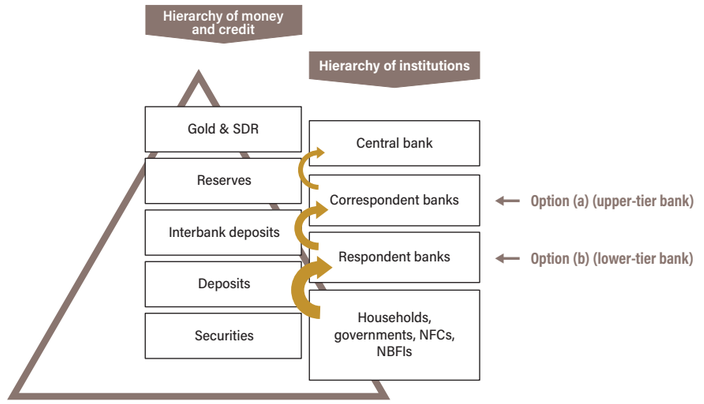


Figure 24. The hierarchy of money and credit.

At each level, what constitutes a debt (a liability) for some entities constitutes money (an asset) to those lower down. For example, reserves are the liability of the central bank but an asset of correspondent banks, who use them to make payments to each other. Similarly, deposits issued by respondent banks are used by non-banks (households, governments, and non-bank financial institutions) to make payments to each other. The arrow size is roughly proportional to economic value.

While there is ample literature discussing the merits and relative performance of government-owned versus private-owned banks,[12] most of this literature fails to distinguish between upper-tier and lower-tier banks, which have very different characteristics. Their effects on an economy differ.

In this report, we are proposing the set-up of an upper-tier bank majority-owned by the Government of Florida. The Bank of North Dakota (BND), described later, is the key role model.

IV. Benefits for Florida

Local Banks, Savings Banks, and Credit Unions

In Florida, presently 10 banks account for 67.9% of the deposit market (above the U.S. average of 60%). On average, these banks have total deposits of $697 billion, and 65.5% of their deposits are booked in other U.S. states. Florida's remaining 179 banks have average deposits of $20 million, and on average 78.1% of their deposits are outside of Florida. The top 10 banks' market share in Florida increased notably between 1994 and 2023 (Figure 25).

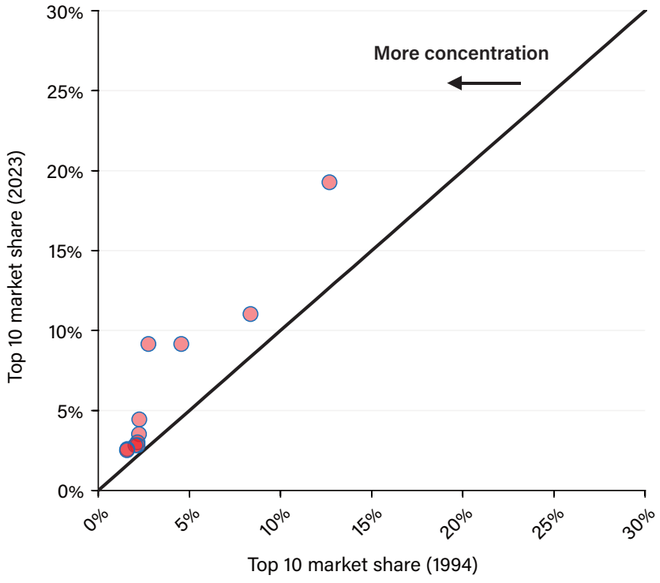


Figure 25. Top 10 market share, Florida, 1994–2023

Source: FDIC deposit market share reports (June 30, 2023)

Overall, two clusters can be detected: those for which Florida represents most of their deposits booked (Figure 26, upper-left corner) and those for which it represents a very small share (Figure 26, bottom-left corner). The first cluster tends to be large, interstate banks. The second cluster tends to be community banks (defined as those banks with <$1 billion in assets and the majority of their deposits booked in Florida). Currently, there are 66 community banks in Florida.

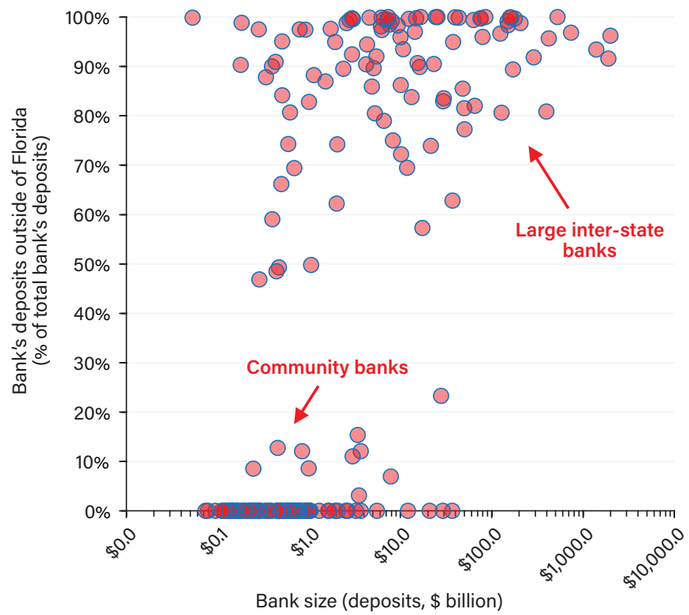


Figure 26. Banks active in Florida, June 30, 2023. Percent of total bank's deposits outside of Florida (vertical axis) by bank's market share in Florida's deposit market (top) and bank size (horizontal axis).

Source: FDIC deposit market share reports

The introduction of SBFL would help community banks in Florida compete against larger banks by helping them fund larger-scale projects through loan participations with SBFL and loan purchases by SBFL. In the case of loan participations, SBFL would act as the "lead bank," arranging the deal for large-scale projects in need of financing, and the community banks would be part of the remainder syndicate of lenders participating afterwards. In the case of loan purchases, community banks would act as loan originators, using their local, "soft" information about borrowers to evaluate their creditworthiness, probability of default, etc. (for which they have an advantage over large banks, including SBFL), and SBFL would agree to purchase some of those loans from community banks ex post facto.

Overall, SBFL would increase total loan funding from community banks to small business (loan purchases) as well as large-scale projects (loan participations) by around 20%, at a cost of 0.43% of FSG annual revenues. Put differently, a $100 million initial investment in the form of share capital injected into SBFL would translate into a balance sheet of $10 billion, around $6.7 billion (at least) of which would contribute to additional funding to Florida's businesses. Importantly, this funding would be used for productive purposes, leading to higher gross fixed capital formation and thus higher GDP (see Section VII).

Florida's Local Economy

The creation of the SBFL would result in an increase in total bank loan funding from both the state bank itself, including in the long run to large-scale projects via loan participations, as well as from the many local community banks to small business. We estimate that in the initial five years, the impact of increasing local bank funding to small firms would amount to approximately $7 billion in new lending from the local banks, as it is proposed to kickstart the operations of the SBFL by an initial one-off purchase of 20% of the loan book of all local banks, extracted by size (namely, selecting the largest 20% of loans). The cost to the State of Florida would amount to ca. 0.43% of the State of Florida's annual expenditures, namely $500 million. This one-off investment would be recouped within approximately four years from returns on equity, after which the State of Florida would henceforth receive significant annual dividends as profit from its investment.

The initial investment of $500 million in share capital injected into SBFL would translate into a balance sheet size of ca. $10 billion after two years, of which about two-thirds (about $6.7 billion) would contribute to additional funding to Florida's businesses (assuming that the local banks would replace the sold loans with new lending of similar proportion within about two to three years).

Importantly, such funding for small firms would be used for productive purposes, leading to higher gross fixed capital formation and thus higher GDP (see Section VII), as well as a significant increase in job creation. It can be estimated that at least ca. 15,000 to 20,000 jobs would be created in the first five years after launching the State Bank of Florida, depending on specific operating policies adopted.

State and Local Government

The State of Florida and local governments in Florida would benefit from the existence and operation of the State Bank of Florida in a number of ways:

- **Dividends:** With Return on Equity (RoE) of ca. 18%, the State Bank of Florida would, after the first three years of establishment, be able to pay a return of ca. $18 million on $100 million in capital invested, every year. Notably, after the initial investment no further investments are likely needed.
- **Higher state-level tax revenues:** Tax revenues are proportional to value-added activities and nominal GDP. The positive effect on Florida GDP would thus also raise state-level tax revenues.
- **Greater job creation and higher labor participation:** While Florida does not have significant structural problems with job creation and unemployment, the launch of the State Bank of Florida would ensure that job creation remains strong in the long run and that labor force participation can likely be raised further, as more local and rural residents no longer counted as part of the workforce are hired by small firms.

- **Greater local autonomy and resilience to shocks from outside of Florida:** The state bank would effectively act as a buffer against shocks from outside Florida to the financial sector in Florida. It is well-documented how "contagion" can affect large financial centers such as New York, Chicago, and Los Angeles, and spread to regional financial institutions. However, by positioning the State Bank of Florida as a reliable and dedicated correspondent bank for all locally headquartered banks in Florida, they would be shielded to a significant extent from the potential adverse effects of outside shocks. Such shocks could include policy changes and the introduction of new instruments by the Federal Reserve or federal policy-makers that may otherwise adversely affect local community banks. Sadly, there are numerous precedents for central banks introducing regulations, ordinances, or operating procedures that make business difficult for small banks, ultimately driving them out of business. The SBFL would render the State of Florida able to respond quickly to potential future adverse policy decisions taken outside Florida, for instance, via the use of its bullion depository function or by acting as a counterparty to Florida community banks even in the case of devastating cyberattacks on the U.S. banking or bank settlement system. On the local level, non-digital analog systems could be introduced quickly as temporary measures in such adverse cases, but their likelihood of being viable would be significantly enhanced if they were backed by a larger counterparty, which role the State Bank of Florida would play.
- Importantly, it is advised that the State Bank of Florida, like the Bank of North Dakota, **not join the Federal Deposit Insurance scheme**. Instead, deposits should be guaranteed by the State of Florida (as is the case in North Dakota). This would limit the control and influence that Federal agencies can exert over the State Bank of Florida (the Federal Deposit Insurance Corporation, for instance, has the power to shut down even healthy banks and has, sadly, made ample use of it).
- **A greater variety of options concerning funding the public sector borrowing requirements for the state and for local governments:** The State Bank of Florida could be active in underwriting state and county debt, reducing borrowing costs, increasing liquidity, and facilitating funding arrangements, while at the same time increasing the positive impact of fiscal measures on the real economy. Bank-funded public sector borrowing has a much larger impact on economic growth than bond-funded public sector borrowing, see Werner (2014c).
- **Direct support of existing state-level policy programs:** The State Bank of Florida could support all State of Florida economic assistance and policy programs by providing for a facility to offer development and directed lending for specific purposes, while ensuring commercial terms and financial viability.

State Pension Funds

The State Bank of Florida could act as the custodian of state pension funds, thereby ensuring that a greater proportion of the investments end up back in the State of Florida, where they would benefit all Florida stakeholders more directly than investments outside of Florida.

The existence of the State Bank of Florida and its function as hub bank for all Florida local and community banks also would allow the state pension funds to increase their options for investing in the Florida economy, namely by investing in bonds issued by the State Bank of Florida, but also by joining directly some of the larger loan syndications arranged by SBFL with local banks. Overall, the existence of the State Bank of Florida is likely to see a greater awareness of and actual investment in the opportunities available for investors in Florida, which benefits all stakeholders.

Citizens

The ultimate beneficiaries of the above-listed benefits would be the citizens of Florida. In addition to benefiting indirectly from the above, citizens also would benefit directly from the consequent greater vibrancy of the small and local banking sector, the likely increase in the total number of community banks (since the creation of the State Bank of Florida is likely to result in a wave of new community bank foundations), and the greater job creation by small and medium-sized companies in Florida that are able to expand faster, hiring more staff.

The bullion depository function of the State Bank of Florida could be arranged as a two-tier system, whereby customers of local credit unions and community banks would deposit gold with their local banks, and these in turn would deposit their own and customers' deposits with the State Bank of Florida. An alternative would be to organize the State Bank of Florida bullion depository function to include direct retail deposits. A combination of both is also possible.

Citizens would also benefit from the role the State Bank of Florida could play in ensuring that cash cannot be phased out entirely (see the following section).

Like in North Dakota, the State Bank of Florida could offer a variety of disaster assistance lending programs that benefit Florida citizens.

In the future, if the State leadership so decides, it would also be possible to make shares in the State Bank of Florida available to residents of Florida, for instance, when a capital raise is planned by SBFL. Publicly offered shares could be a different share class. There could be rules restricting such shareholdings only to natural persons and/or legal persons domiciled in Florida, for instance. However, it should be the aim for the State to always hold at least 50% of the shares.

V. Risk Management

Possible Future State Requirement to Take Cash

Several states, notably Tennessee in 2022, have passed legislation that requires businesses to accept cash for certain transactions, ensuring that cash cannot be phased out easily.

This legislation follows precedent set by more than a dozen other states that have required businesses to accept cash payments, namely Arizona, Colorado, Connecticut, Delaware, Idaho, Maine, Massachusetts, New Jersey, New York, North Dakota, Oklahoma, Pennsylvania, and Rhode Island; all have passed legislation favoring cash as a form of payment. Additionally, cities such as Washington DC, Berkeley, Chicago, New York, Philadelphia, and San Francisco require businesses to accept cash payments.

Whether Florida will in the future pass such legislation or not, the existence of a State Bank of Florida that has in its articles of association a statement that promissory notes and paper money as well as coin, including gold and silver coins, will be accepted at their market value, will provide certainty for individuals, traders, businesses, and local banks that there is a depository of "last resort" that will accept cash, hence ensuring that cash cannot be entirely eliminated. Moreover, it offers a practical mechanism for ensuring that a cash and/or bullion economy and means of payment develops, assuring liquidity, credibility, and certainty.

Protection against CBDCs

The establishment of the State Bank of Florida would mark an important step to counter the ongoing and Federal Reserve-led program of consolidation of the U.S. banking industry: over the past 30 years, more than 10,000 banks have disappeared in the U.S., mostly small local banks.

Moreover, establishing the State Bank of Florida offers an important measure to counter the recent move by the Federal Reserve system to explore the introduction of a USD central bank digital currency (CBDC).

Central bank digital currencies are named to distract from their true nature. Firstly, they give the impression that digital currencies are a novelty, but in actual fact bank digital currency (BDC) has been in circulation as the main means of payment for many decades. What is novel is the centralization aspect, the programmability feature, and the unprecedented technology for total surveillance and bespoke micromanagement of all transactions in the economy via this new tool. As Catherine Austin Fitts has argued, "CBDCs are not currencies, they are a control tool."

What is also novel is that the most influential bank regulator, the Federal Reserve system, is preparing, via the issuance of CBDCs, to step into the arena and compete against the banks it regulates. It is as if the umpire in a football game were to decide to run after the ball himself, while using his powers to stop the contenders, ensuring that he will score all the goals. For what the name distracts from is that essentially central banks issuing CBDCs will offer current accounts at the central bank to the general public, thus directly competing against the banks. This is historically unprecedented, as it breaks the centuries-old tradition that the central bank acts as a wholesale bank in a two-tier system in which the general public and companies will not deal with the central bank, but the commercial banks. Should such retail CBDCs ever be introduced, it is apparent how only a minor financial crisis could result in a massive shift of bank deposits away from commercial and local banks to the Federal Reserve digital currency deposit accounts, rendering the banking system defunct within a short time. To put it mildly, CBDCs thus could adversely affect the capacity of banks for funding themselves with deposits and trigger deposit outflows from private bank deposits onto the central bank balance sheet to CBDC accounts. Conservative estimates by proponents of CBDCs are that their introduction could lead to outflows equivalent to 5% to 10% of bank assets (García et al., 2020) and 20% of household and non-financial deposits (Bank of England, 2021). In crisis situations, a far larger and irreversible outflow could occur—likely secretly welcomed by the central planners—de facto establishing a Soviet-style monobank system with only one bank, the central bank.

Necessary protections against CBDCs are the availability of sales transactions settled in cash—for which the State Bank of Florida would provide valuable support—and state-level financial gravity allowing state legislators and the private sector in the state to organize payments outside the CBDC system. Again, the State Bank of Florida would provide a crucial supporting or even central role in any such schemes. Finally, should CBDCs be introduced, then states without a state bank will find that their state-domiciled banks will disappear quickly, leaving the entire state economy beholden to the programmable micromanagement of the Federal Reserve. States with a state bank, such as North Dakota, will find that their local banks can survive, even when an external shock drives personal deposits away from local banks to the Federal Reserve's CBDC accounts, because the state bank can substitute for dwindling local deposits by purchasing bank bonds on the one hand, and it will assure depositors that the local state-level banks are strong, thanks to the backing of the state bank. These backup functions of the state bank are further enhanced by its cash and bullion depository function.

Protection of Financial Transaction Freedom and Privacy

Banks have access to an enormous amount of historical and ongoing current information about depositors and their digital transactions. They must be given credit for, on balance, resisting the temptation to abuse this information against the interests of bank customers and for not selling it to third parties (as fintech "neo-banks" routinely do).

This wealth of information is precisely what a CBDC system targets and aims at using as a surveillance tool as well as for the programmable direction of individual behavior through the central planners.

The State Bank of Florida should have in its statutes that it protects privacy and will not use transactional information for any purpose outside of technical banking requirements.

By providing a bulwark in defense of cash, precious-metal hard money, and locally anchored community banks, the State Bank of Florida would offer protection against financial intrusion from outside the State of Florida and could protect individual freedom and privacy.

Comments on Related Digital Systems: Banking and Telecommunication Systems and State-Controlled Cloud

Modern core banking IT systems often use cloud computing and cloud storage of data. The servers physically storing the data are in a growing number of cases the giant data storage services offered by Amazon Web Services (AWS) or similar organizations thriving on accumulating and utilizing Big Data.

This concentration of data storage significantly heightens concentration risks in the financial system that could emanate from rogue access to or use of such data, as well as cyberattacks to down the system. In addition, central data storage at AWS cannot be expected to be secure from prying by secret services, such as the CIA, with which Amazon has a close business relationship.

The State Bank of Florida would have its own high-security data storage center, which can be offered, at a fee (and hence will be profitable), to the banks headquartered in Florida. This ensures that the State of Florida can significantly enhance its resilience to any cyberattack affecting the large nationwide or federal banking networks. The State Bank of Florida can effectively host the core of what could be a state-controlled secure and independent cloud storage system that will enhance state-level autarky in the sphere of IT and data communications as well as banking and financial transactions.

VI. History of State Banks

Bank of North Dakota

The Bank of North Dakota (BND) is unique as it is the only remaining state-owned bank in the continental U.S. Although it has played various roles since its founding in 1919, BND's most important role is serving as a lending partner for North Dakota's numerous small banks. Over one-half of BND's current loan portfolio consists of loan participations and loan purchases from community banks. Student loans account for most of the remainder (Kodrzycki and Elmatad, 2011).[13] It has only one location and does little retail banking, so it complements rather than competes with banks (Collins, 2018). It also holds the deposits of the state and certain agencies, and provides disaster assistance lending through numerous programs (S&P Global, 2021).

It participates in business loans largely originated by other North Dakota banks. This arrangement implies that local private banks have an informational advantage over BND in determining the creditworthiness of North Dakota borrowers. However, without the participation of another lender such as BND, local banks might be unable to meet the demand for relatively larger loans (Kodrzycki and Elmatad, 2011).

For example, BND may act as lead financial institution to initiate financing to large-scale projects (e.g., loans in the $10-$75mn range), and guarantee 30% to 50% of the loan amount, so that smaller lenders (community banks) are encouraged to participate. The scheme achieves bond-type interest rates without going to the market.[14]

Bank of North Dakota is owned and operated by the State of North Dakota under the supervision of the Industrial Commission as provided by Chapter 6–09 of the North Dakota Century Code (NDCC). BND is a unique institution combining elements of banking, fiduciary, investment management services, and other financial services, and state government with a primary role in financing economic development (Kodrzycki and Elmatad, 2011). The North Dakota legislature determines appropriations from the general fund every legislative session, and the amounts designated from BND's capital will vary based on the state's needs and BND's capital and liquidity levels. However, these dividends have typically not exceeded net income by a large enough amount to significantly impact capital levels (S&P Global, 2021).

BND is a participation lender; the vast majority of its loans are purchased from financial institutions throughout the State of North Dakota.[15] BND's primary deposit products are interest-bearing accounts for state and political subdivisions. Deposits held at the Bank are not covered by depository insurance, but rather are guaranteed by the State of North Dakota as described in the NDCC (BND, 2021).

Figure 27 shows BND's loan portfolio composition. Participations account for 43% of BND's credit exposure (BND, 2021).

	2021	2020
Commercial loans, of which 2% and 1% are federally guaranteed	**52%**	48%
Student loans, of which 100% and 100% are guaranteed	**24%**	25%
Residential loans, of which 68% and 67% are federally guaranteed	**9%**	11%
Agricultural loans, of which 5% and 5% are federally guaranteed	**15%**	16%

Figure 27. Bank of North Dakota loan portfolio composition
Source: BND (2021)

Importantly, in other states, community banks face competition from large private banks that have greater lending capacity and offer a wider array of services to business customers. Since BND does not compete in the same ways as private banks, its presence seems to strengthen the role of community banks in North Dakota and limit the presence of nationwide and international banks (Kodrzycki and Elmatad, 2011).

In 2010, BND had total assets of $4 billion and total deposits of $3.1 billion. BND has shown a profit each year, according to data available since 1971. In fact, BND has consistently produced high returns on its assets compared to similarly sized private banks. BND accounts for about 15% of the total deposits of banks with operations in North Dakota—more than any other bank in the state. Almost all of BND's deposits are attributable to state government, which is required to deposit its cash reserves in BND. Although the bank is allowed to accept deposits from many other sources, it does not actively market its services to individuals, businesses, or local governments (Kodrzycki and Elmatad, 2011).

BND has a diversified loan portfolio, of which the largest shares are student loans (37%) and commercial loans (36%). Roughly 50% of the bank's loan portfolio consists of loan participations and loan purchases from community banks. Loan participations are arrangements where a lead bank (in this case, a smaller institution) originates and services a loan, and another bank (in this case, BND) is involved in some capacity. This involvement can take various forms, including guarantees, capital contributions for the initial loan, and interest rate buy-downs (contributions to payments during the early years of a loan to reduce costs to the borrower). Some 50% of BND's loan portfolio is guaranteed by federal and state agencies. As mentioned, the only major area where BND actively competes with other banks is student loans (Kodrzycki and Elmatad, 2011).

During the past 35 years, the bank has returned roughly two-thirds of its profits to the state, on average. However, this share has been quite variable, ranging from a low of near zero in 1989 and 2000 to more than 150% in 1996 and 2001 (Kodrzycki and Elmatad, 2011).[16]

According to S&P Global (2021), as of November 2021, BND had a credit rating of A+. To quote the report:

> *"Bank of North Dakota (BND) has a century of stable operating performance as a state-owned bank focused on promoting commerce in North Dakota. ... As a government-related entity (GRE), we see a high likelihood of support from the state of North Dakota if the bank experiences stress. BND has one of the highest risk-adjusted capital (RAC) ratios for rated U.S. banks. We expect the bank to maintain very strong capital levels, though capital ratios could decline if net income is less than capital transfers (dividends) to the state's general fund."*

The North Dakota banking market has a robust small bank presence. Banks with less than $500 million in deposits account for almost one-half of total bank deposits in the state (Kodrzycki and Elmatad, 2011). In 2014, North Dakota had 11.2 banks per 100,000 residents,[17] while the U.S. average for 2021 is 1.27.[18]

In this environment, BND plays the role of sharing risk with smaller banks, ensuring that larger-scale projects can get funding. Smaller banks and state government tend to turn to BND for funding during crises (Kodrzycki and Elmatad, 2011).[19]

And, as we have seen, small banks tend to grant more funding to smaller firms. It is quite telling that small firms in North Dakota make up a much higher share of total firms when compared to the U.S. average (Figure 28).

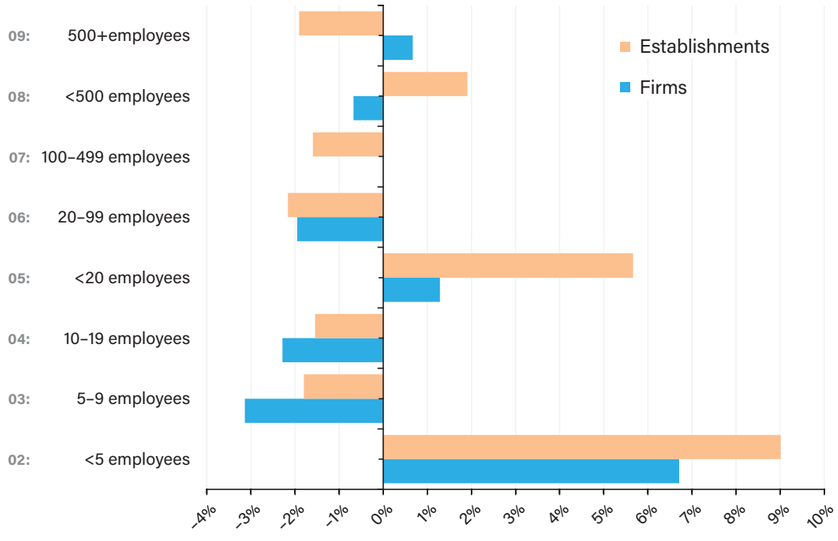


Figure 28. Percentage of total establishments and firms by size: difference between North Dakota and U.S.

Source: U.S. Census Bureau, 2021 SUSB Annual Data Tables by Establishment Industry

Also, the unemployment rate has been consistently lower in North Dakota when compared to the U.S. average (Figure 29). In times of severe stress, like the 2008–09 financial crisis, the unemployment rate in North Dakota barely increased. The reason is that employment, and thus unemployment, is largely a function of the labor situation in the small-firm sector. And, as we have seen, small firms' business conditions are significantly influenced by the availability of bank credit, which in turn depends on the extent to which small banks are active and able to supply funds in the local area.

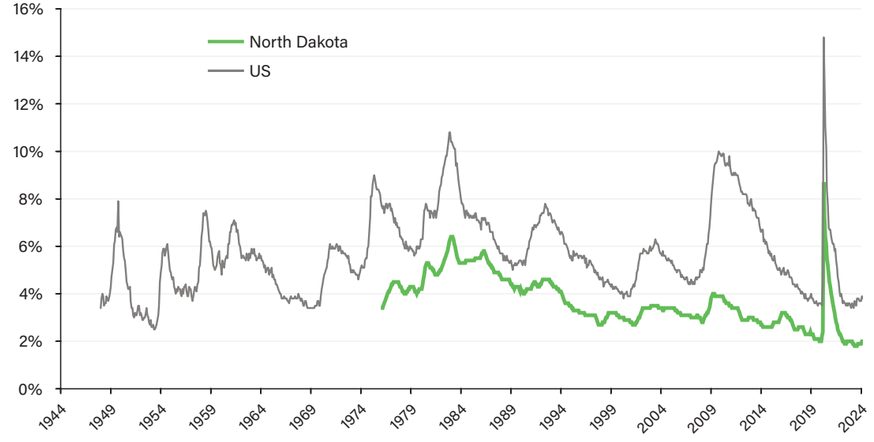


Figure 29. Unemployment rate in North Dakota versus the U.S., 1949–2024

Source: FRED

History of Paper Credit and Banking in North America

The Thirteen Colonies of England, later to become the United Colonies and then the United States, only struck a limited amount of silver coins. Instead, the silver coins from Spanish Mexico began to circulate widely. Spain was from 1516 to 1713 ruled by the Austrian Habsburg dynasty. In one of the Habsburg core territories, in the Iron Mountain area of Bohemia, a major silver mine near the small town of Joachimstal (Joachim's Valley, "Tal" meaning "valley" in German) delivered the material used to strike silver coins with a high precious-metal content. The coins came to be called "Joachimstaler," after the town, which came to be shortened to "Taler." In the local German dialect this was pronounced "Dolar," which is also what they came to be known as in North America.

Given the limited amount of silver or gold coins available in the colonies, Francis Rawle, a Quaker merchant and landowner in the Pennsylvania Assembly, wrote a document in 1721, in which he proposed the issuance of paper money by the State of Pennsylvania that would not be backed by gold or silver (Havermann, forthcoming).

On March 12, 1723, the Assembly passed the first enabling act, permitting the issuance of £15,000 of bills of credit with £4000 to support the government and

£11,000 for loans on land, houses, farms, and businesses: "AN ACT FOR THE EMITTING AND MAKING CURRENT FIFTEEN THOUSAND POUNDS IN BILLS OF CREDIT" (Havermann, forthcoming). The State of Pennsylvania also created a General Loan Office of Pennsylvania with powers to negotiate loans, ascertain the value of securities, receive mortgage payment, and sell, grant, or dispose of mortgaged property in default of payment.

The scheme was highly successful. Benjamin Franklin, Pennsylvania's representative in London, reported: "In the Colonies we issue our own money. It is called Colonial Scrip…. [W]e control its purchasing power, and we have no interest to pay to no one" (as quoted by Senator Robert Owen, 1939, p. 98).

By March 12, 1724, there were £45,000s in circulation. During the Seven Years War, the colonies were forced to support Britain and issued large amounts of paper currency. After the war, paper currency was actively taken out of circulation in order to suppress inflation. A net sum of 25,000 was retired from 1760 to 1769, while prices dropped by ca. 13%.

Always jealous of economic success of ordinary people in the colonies, on April 19, 1764, the British Parliament, no doubt influenced by the unelected Remembrancer (a member of Parliament appointed by the banker-dominated City of London Corporation to look after its interests), passed the Currency Act of 1764, prohibiting the colonies from printing any new paper money (Havermann, forthcoming; Lester, 1939). This had a devastating impact on the economy of the colonies, and the protests that followed are said to have contributed to the momentum that culminated in the War of Independence. Benjamin Franklin is quoted by Senator Owen (1939) to have said:

> *"The Colonies would gladly have borne the little tax on tea and other matters had it not been that England took away from the Colonies money, which created unemployment and dissatisfaction."*

It is only with the end of the issuance of State paper money that, a few years later, the first bank in U.S. history was granted a charter by Congress, the Bank of North America in 1782. This was followed by the first two state-run institutions, The Massachusetts Bank and the Bank of New York in 1784. When George Washington became president in 1789, these were the only three banks in the U.S. (Sylla and Wright, 2019).

In 1791, the first attempt at establishing a central bank was made by private sector entrepreneurs. It was called "The First Bank of the United States" and granted a 20-year charter by the United States Congress. In the following five years, 18 new commercial banks sprang into existence. The charter of The First Bank of the United States expired in 1811.

In the early 1800s, during the beginning of the Industrial Revolution, the emergence of a new class of merchants and manufacturers produced the need for more capital across the U.S. At this time, being a developing country, European banks refused to lend to the U.S. Government, thus creating the need for a domestic supply of credit.

"The Second Bank of the United States" was granted a 20-year charter in 1816. As the renewal date approached, in 1833, U.S. President Andrew Jackson made the decision to remove U.S. Treasury deposits from The Second Bank of the United States. Instead, he placed them in a number of state banks. Three years later when the time came to renew the charter for The Second Bank of the United States, President Jackson vetoed the bill leading the bank to convert into a private corporation. This was the beginning of the "free banking" era, a time when only state-chartered banks existed. This lasted until 1862. After this came the era of both state and nationally chartered banks.

The total number of banks in the U.S. peaked in ca. 1926 at ca. 23,000 banks. The Federal Reserve policies of the 1920s and 1930s had created a vast expansion of bank credit for asset purchases, causing the asset bubble of the "Roaring Twenties," while the subsequent tightening of bank credit and the closure of more than 10,000 banks resulted in a significant contraction of bank credit and hence economic growth and prices—the deflationary Great Depression of the 1930s (see Figure 30).

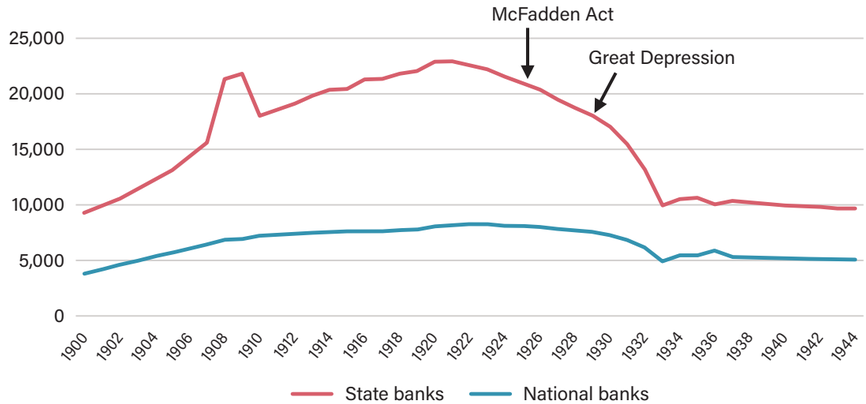


Figure 30. Total number of banks during the Roaring Twenties and the Great Depression. The 1927 McFadden Act enabled national banks to compete with state banks by permitting them to open branches within other state boundaries.

The establishment of the FDIC as a government corporation in 1933 through "The Banking Act" gave the FDIC authority for supervision over state-chartered banks not members of the Federal Reserve System, leading to the subsequent examination of these ca. 8,000 banks. This act extended federal oversight over all commercial banks, and the Glass-Steagall Act in the same year separated commercial and investment banking.

By 1934, after only one year, the FDIC had an office located in every state and introduced deposit insurance of $2,500, increasing to $5,000 later in that year. By 1935, there were 9,027 state-level banks, compared to 4,692 nationally chartered banks. According to the FDIC, this approximate number of banks remained consistent until the 1980s.

Concerning the question of state-owned banks, in the 1800s, Alabama, Kentucky, Illinois, Vermont, Georgia, Tennessee, and South Carolina had all established banks that were owned, in their entirety, by the state government. Missouri, Indiana, and Virginia had banks with the State holding a majority interest. By the year 1900, Virginia and Kentucky were the only states remaining with state-owned banks. In 1919, the Bank of North Dakota was founded, as banks outside of North Dakota were charging farmers in North Dakota extortionate interest rates of up to 12%. Today, BND is the only surviving state bank across the U.S.

Other Historical Examples

Many German states established state-level, state-owned banks in the 19th century.

Domestic Legislation, including Recent Examples

Recent legislation to allow for the establishment of state-level or public banks is listed below (list compiled by Catherine Austin Fitts and associates):

2023

Massachusetts: An Act to establish a Massachusetts public bank. There shall be a Massachusetts public bank (the Bank), wholly owned by the commonwealth, to provide a safe depository for a portion of the public funds in the commonwealth and to support the economic well-being of the commonwealth, its cities and towns, its residents, its businesses and its state and municipal institutions, with an accountable and responsive governance structure that ensures community input.[20]

New York: Establishes the state of New York public bank. Relates to establishing the state of New York public bank to use the state's depository assets to generate additional benefit for the people and the economy of the state.[21]

Oregon: Establishes State Public Bank Task Force. Directs task force to study and make recommendations regarding establishment of state public bank. Requires task force to submit report to committee of Legislative Assembly by January 31, 2024.[22]

Oregon: Establishes Bank of the State of Oregon. Specifies purposes of bank. Establishes Bank of the State of Oregon Board to operate and manage bank. Creates advisory board of directors to advise bank board and management on operation of bank. Requires bank to accept deposits of public funds and permits bank to accept deposits of other funds. Permits bank to make, purchase, guarantee, or hold certain loans and to serve as custodian bank. Specifies other powers. Directs State Treasurer to deposit moneys in bank in amount treasurer determines is necessary to allow bank to fulfill duties.[23]

Washington: Creating the Washington state public infrastructure bank.[24]

2022

New Mexico: Public Banking Act.[25]

New York: Establishes the state of New York public bank. Relates to establishing the empire state public bank to use the state's depository assets to generate additional benefit for the people and the economy of the state.[26]

Oregon: Proposes amendment to Oregon Constitution to specify that section restricting certain banks does not prohibit establishment of bank owned or operated by State of Oregon. Refers proposed amendment to people for their approval or rejection at next regular general election.[27]

2021

Hawaii: A Bill for an Act Relating to a Bank of the State of Hawaii; Bank of the State of Hawaii Working Group. Establishes the Bank of the State of Hawaii Working Group to propose legislation to establish a state-operated bank of the State of Hawaii. Appropriates funds. The Working Group shall submit a report of its findings and recommendations, including any proposed legislation, to the legislature by January 1, 2022. Effective 7/1/2050.[28]

Hawaii: A Bill for an Act Relating to Public Banking; Implementation Board; State-Owned Bank; Financial Institutions. Establishes an implementation board to review, investigate, and study the feasibility of establishing a state-owned bank. Requires a report to the legislature prior to the regular session of 2022.[29]

Massachusetts: An Act to establish a Massachusetts public bank.[30]

New Mexico: An Act Relating to Public Finance; Enacting the Public Banking Act; Creating the Public Bank of New Mexico.[31]

New York: Relates to establishing the state of New York public bank to use the state's depository assets to generate additional benefit for the people and the economy of the state.[32]

New York: Relates to establishing the empire state public bank to use the state's depository assets to generate additional benefit for the people and the economy of the state.[33]

New York: Relates to establishing the New York Public Banking Act. This bill would establish the New York Public Banking Act to create a safe and appropriate regulatory framework for cities and counties seeking to establish public banks. The bill additionally would allow the Department of Financial Services (DFS) to issue special-purpose public bank charters.[34]

Oregon: Establishes Bank of the State of Oregon.[35]

Oregon: Provides that local government may not become stockholder in or loan credit to or in aid of municipal bank. Provides that municipal bank is not required to obtain deposit insurance from Federal Deposit Insurance Corporation under certain conditions. Provides that municipal bank may act as depository or custodian of

public funds under certain conditions. This bill was introduced at the request of the Oregon Public Bank Alliance.[36]

Washington: Concerning the creation of the Washington state public bank.[37]

States that Introduced Legislation Prior to 2021

Alaska	Illinois	Montana	Pennsylvania
Arizona	Louisiana	Nevada	Rhode Island
California	Maine	New Hampshire	South Carolina
Colorado	Maryland	New Jersey	Vermont
Connecticut	Massachusetts	New Mexico	Virginia
DC	Michigan	New York	Washington
Florida	Minnesota	North Carolina	West Virginia
Hawaii	Mississippi	North Dakota	
Idaho	Missouri	Oregon	

International

A comprehensive overview of state banks is beyond the scope of this report. Instead, a few key examples are highlighted.

Germany

On the national level, the Kreditanstalt für Wiederaufbau (KfW) has served as the de facto economic development bank of the Federal Republic. Founded in 1948 to help with the rebuilding of cities that had been carpet-bombed during the Second World War, today it is the world's largest development bank and has a balance sheet of more than $550 billion. More than 90% of its funding needs are raised by the issuance of bonds that are guaranteed by the Federal Republic of Germany and hence obtain a high credit rating, lowering the funding costs. At the same time, KfW is exempted from corporate taxes due to its legal status as a public agency. It provides loans for purposes prescribed by the KfW Law at lower rates than commercial banks. However, it does not compete directly with banks and funnels most of its lending to the final borrowers via the private sector banking system. The German banking system has the largest number of banks in Europe, of which 80% (almost 1,500 until recently) are not-for-profit local community banks (public savings banks or mutually owned cooperative banks). Thus, the role of KfW is similar to the role the State Bank of Florida could play on the state-level in the U.S.

Another relevant example are the state-level banks. The Federal Republic of Germany consists of 16 states, several of which also have their own state-owned banks. An example is the Landeskreditbank Baden-Württemberg in South-West Germany. This state bank has had the task to provide development loans to companies and housing loans to individuals, as well as cooperate with the local banks. In 2021 it recorded assets of $90 billion.

United Kingdom

The German KfW state bank was examined by leading politicians and lawmakers in the UK (e.g., Sir Vince Cable as Secretary of State for Business, Innovation and Skills) and was taken as a model for the establishment of the British Business Bank, established by the Department for Business, Innovation and Skills in 2014. This is a UK state bank, with a similar goal to KfW, namely to ensure sufficient funding for SMEs and the economy in general and help the functioning of the financial sector.

However, unlike the KfW in Germany, which can rely on more than 1,500 community banks to funnel its funding to SMEs, in the UK there are virtually no community banks. As a result, the British Business Bank has relied more on fund-based investment schemes, outsourcing individual investments to fund management companies earning attractive fees. This has raised the cost for the end user. Furthermore, the British Business Bank remains a small institution, recording a balance sheet of only $4.2 billion at the end of 2022, with a capital of ca. $3 billion. Its lack of size is mainly due to the fact that it does not possess a banking license and does not actually operate as a bank: It fails to take deposits. So, the lacking ingredients in the UK are that (a) the British Business Bank, despite its name, does not operate as a bank, but rather as an investment fund, as can be seen from its capital/asset ratio; and (b) local and community banks do not yet exist.

Japan

A key example is the Development Bank of Japan, which was founded in 1951 as the Japan Development Bank. It had $162 billion in assets in 2022, with a capital of $7.6 billion. This bank has provided loans to companies directly, but more commonly, similarly to KfW in Germany, in syndication with other banks. It is funded by the government from national insurance contributions and hence, like the British Business Bank, also operates as an investment fund rather than a bank.

India and China

These developing countries have utilized numerous state banks and state-owned banking enterprises to boost economic growth. Most Chinese banks have a significant state ownership. China presently has the second largest number of banks in the world, at more than 4,000, after the U.S. (more than 5,000). Concerning China, please see Duan et al. (2023, 2024).

VII. The Case for Growth and Prosperity

For centuries, it was thought that for an economy to grow, the amount of money in circulation ought to increase proportionally. This was the famous "quantity theory of money," also called the "equation of exchange." This equation linked together the "real economy" (*Y*) (what we today call real Gross Domestic Product, or GDP), the price level (*P*), with the amount of money (*M*), which circulated with certain velocity (*V*).

$$P \times Y = M \times V$$

For a while, this relationship worked well empirically, and the data seemed to suggest the equation was valid, which meant that velocity (*V*) was relatively constant, and the link between money (*M*) and the real economy (*Y*) was understood: more money, more economic activity.

In the 1970s, however, the equation began to break down, and velocity (*V*) no longer seemed stable; it actually fell substantially during the 1970s through the 1980s across industrialized countries. As Charles Goodhart (1989), a prominent UK monetary economist, put it:

> *"The equation came apart at the seams during the course of the 1980s."*

In other words, the link between money and the economy was no longer a reliable one. The economics profession reacted by capitulation, and dropped money altogether from virtually all economic models (the infamous DSGE models that did not see the crisis coming, and which remain dominant today).

During the 1990s, a series of publications by Werner (1992, 1997, 2005, 2012b) appeared that showed that the equation was still valid; it only had to be adapted to our modern banking system.

Werner performed two operations to the quantity equation:

- Replace money (*M*) by bank credit (*C*).
- Divide the money stream into two: money that goes into the real economy (C_R), like loans for SMEs, and money that goes into speculation and unproductive uses (C_F), like real estate and investment funds.

The replacement of money (*M*) by bank credit (*C*) can be done because, as several central banks and dozens of economists now recognize, banks create money when they grant loans. The Bank of England (McLeay et al., 2014), for example, explains in a 2014 paper:

> *"When banks make loans they create additional deposits for those that have borrowed.… Banks making loans and consumers repaying them are the most significant ways in which bank deposits are created and destroyed in the modern economy."*

More recently, the Bundesbank (2017) stated:

> *"In fact, book money is created as a result of an accounting entry: when a bank grants a loan, it posts the associated credit entry for the customer as a sight deposit by the latter and therefore as a liability on the liability side of its own balance sheet. This refutes a popular misconception that banks act simply as intermediaries."*

According to Goodhart (2017), this new view "is now taking over as the consensus approach."

In a landmark experiment, Werner (2014a) had performed the first empirical test on a small German bank in lower Bavaria, the Raiffeisenbank Wildenberg e.G. The test consisted of borrowing €200,000 from the bank while analyzing all the internal transactions that the bank registered in its IT accounting system. The test showed without doubt that the bank created the money when it extended the loan. No money was transferred from other accounts inside or outside the bank to the borrower's account. The money was created "out of nothing."

In other words, unlike non-bank firms, banks create money when they lend to households, firms, and governments. They do so by crediting the borrower's account, as a simple double-entry bookkeeping exercise. Figure 31 shows the structural difference between bank and non-bank lending mechanics (see also Werner, 2016).

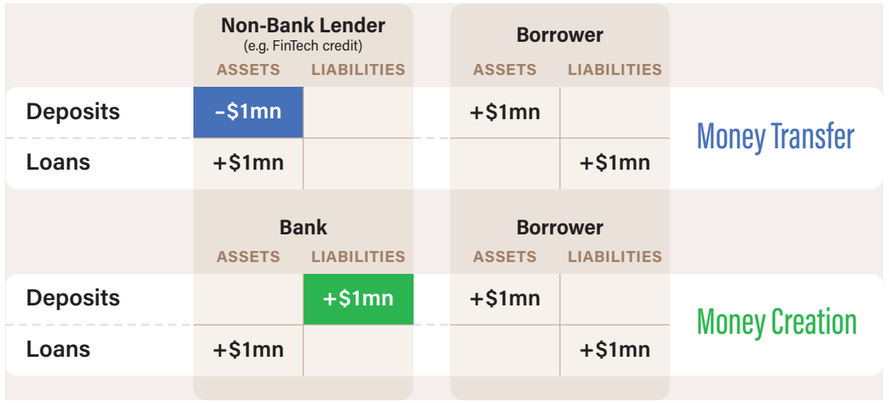


Figure 31. Mechanics of lending by non-banks (top) and banks (bottom)

Thus, the quantity theory of money can be turned into two separate equations:

$$CV = C_R V_R + C_F V_F$$

$$PQ = P_R Q_R + P_F Q_F$$

The next step in Werner's logic was to equate the first pair of variables and the second pair of variables, so that:

$$C_R V_R = P_R Q_R = P_R Y$$

$$\text{With } V_R = P_R Y / C_R \text{ constant}$$

And:

$$C_F V_F = P_F Q_F = P_F A$$

$$\text{With } V_F = P_F A / C_F \text{ constant}$$

Applying the chain rule for differences (that is, $\Delta(ab) = a\Delta b + b\Delta a$; with a constant, $\Delta(ab) = a\Delta b$), which, when applied to stocks, represent flows:

$$\Delta P_R Y = \Delta nGDP = \Delta C_R V_R$$

$$\Delta P_F A = \Delta C_F V_F$$

Finally, using year-over-year relative growth rates:

$$\Delta nGDP / nGDP = \Delta C_R / C_R \quad (1)$$

$$\Delta P_F A / P_F A = \Delta C_F / C_F \quad (2)$$

The quantity theory of money turned into a new theory: the quantity theory of disaggregated credit (QTDC). Since it demonstrates that the hitherto dominant simple quantity equation is a special case (namely, the case that bank credit creation is only extended for real economy transactions), this is now the General Quantity Equation. It has two predictions:

- Equation (1): The economy grows if bank lending for the real economy grows.
- Equation (2): Asset bubbles are caused by non-productive bank lending.
- Furthermore (not elaborated here), if bank credit creation for the real economy is mainly used for consumption, there will be consumer price inflation and little or no real economic growth (this is what happened in March 2020 under Federal Reserve quantitative easing, causing the inflation of 2021 and 2022).

Since it was formulated in the 1990s by Werner, other scholars have put the theory to test with supportive results.[38] Virtually all of the papers found that bank lending to the real economy, measured in various ways, was the only statistically significant variable explaining nominal GDP growth.

Figure 32 shows estimates by Werner (1997) for the Japanese economy during the 1980s and 1990s. The top panel shows the first prediction of the theory, namely, that nominal GDP growth ought to be caused by bank credit for GDP transactions. The bottom panel shows the second prediction: asset bubbles (in this case, land prices) are caused by bank credit to real estate.

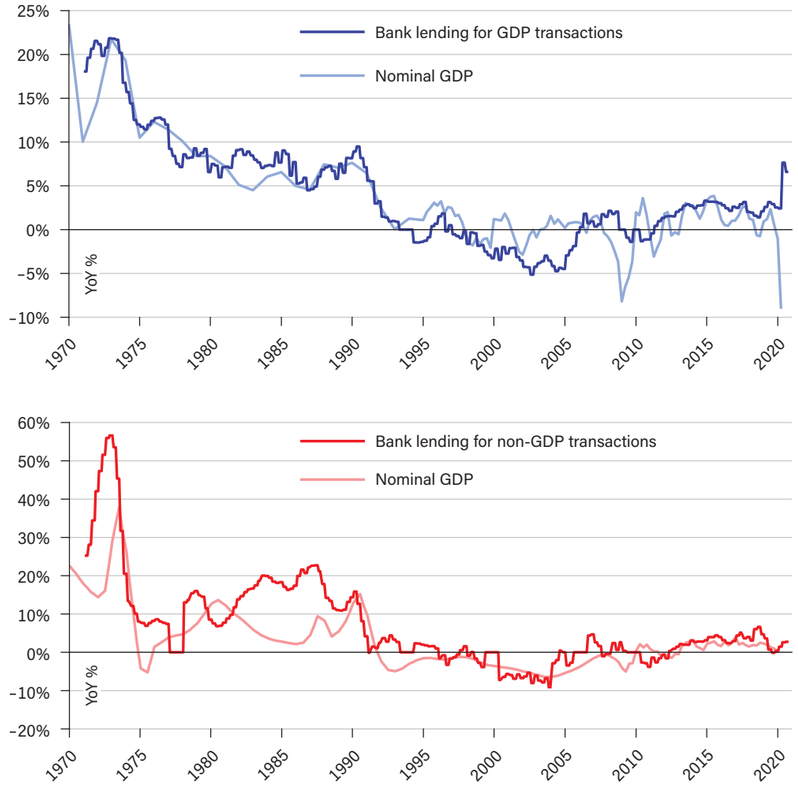


Figure 32. Bank lending in Japan

Source: Werner (1997); Bank of Japan

The econometric tests performed by Werner confirmed the predictions, but we can see by visual inspection alone that the theory is very plausible. Figure 32 uses Japanese data, and Figure 33 tells a similar story using American data.[39]

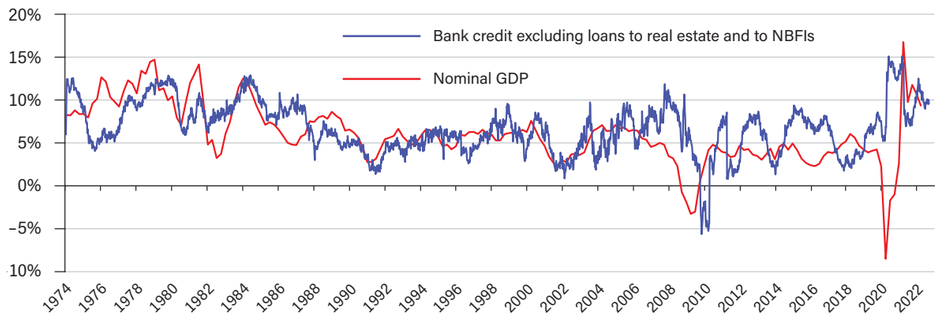


Figure 33. In blue: Growth of total U.S. commercial bank credit excluding loans to real estate and loans to non-bank financial institutions (NBFIs). In red: U.S. nominal GDP growth.

Source: Board of Governors of the Federal Reserve System, *H.8 Assets and Liabilities of Commercial Banks in the United States*

As some researchers have noted (e.g. Clavero, 2017), in the area of banking and macroeconomics, Werner's quantity theory of credit stands as the empirically most successful theory. The theory has far-reaching implications:

- **The economy can only grow if banks lend for activities that contribute to GDP:** This includes lending to firms that will invest (*I*) in machinery, R&D, staff training, acquisition of fixed assets, etc.; lending to governments (*G*) who will spend in paying civil servants and infrastructure projects; and lending to households for consumption (*C*). GDP can also be stimulated when banks lend to successful exporters (*NX*).

$$GDP = C + I + G + NX$$

- Fiscal policy—such as government spending—will only boost growth if it is backed by bank credit creation. **Pure fiscal policy without an increase in bank credit creation will not boost growth** (Werner, 2014b).
- **Asset bubbles can be prevented:** This can be done by redirecting bank lending away from mortgages and lending to other financial institutions, to lending to non-financial firms.

- **Only lending to the real economy is sustainable:** For every dollar in new debt created by bank loans to the real economy, there is a one-dollar increase in national income (GDP). Therefore, the debt is sustainable and can be serviced and repaid. GDP grows in tandem with debt, and debt-to-GDP levels stay constant.[40] Bank lending to non-GDP activities, on the other hand, increases debt but does not increase GDP. It leads to ever higher debt-to-GDP ratios which create crises, recessions, and debt overhangs that stifle growth. It also decreases housing affordability and increases inequality through capital gains.
- **Lending for consumption can create inflation—lending for investment is less inflationary:** If more money chases a fixed amount of goods and services, it is more likely that this will result in inflation than if lending is directed at investment (machinery, equipment, R&D, etc.), which will expand the productive capacity of the economy and thus increase demand as well as supply of goods and services.
- **Small banks can have big effects:** Unlike non-bank financial intermediaries like investment funds, bank lending creates money, and if fed adequately to the economy (through GDP expenditures), it can make whole communities and regions grow in a sustainable way. Furthermore, SMEs are the biggest employer in most countries, and they are the backbone of any economy. As mentioned, a dramatic case in point is provided by German SMEs: well-served by the thousands of small, not-for-profit community banks, these SMEs can access funding to grow. In fact, during the 2008–09 recession, unlike the big German banks, the small banks increased lending to their SME customers when they most needed it. Germany has the highest number of "hidden champions," more than any other country in the world. These firms are world leaders in their niche markets in terms of market share, and they contribute substantially to Germany's 8%-odd trade surplus.

VIII. Setting Up the State Bank of Florida (SBFL)

According to FDIC data, Florida's 66 community banks (defined as those with total deposits <$1 billion and with >50% of their deposits booked in Florida) have a combined balance sheet of $26.9 billion.[41] For the SBFL to be able to purchase at least 20% worth of these banks' loans (or $5.4 billion), SBFL should need to have a balance sheet of at least $10 billion. Assuming a leverage ratio of 5%, and without considering retained profits or set-up costs, this translates into an initial capital injection of $500 million.[42]

According to Urban Institute, Florida enacted its FY 2024 budget in July 2023. The budget reported $46.1 billion in general fund spending and $116.5 billion in total spending.[43] That is, setting up SBFL would cost 0.43% of the State's annual expenditure. Ideally, this cost would be a one-off expense, as SBFL would replenish and grow its capital using retained profits.[44] Furthermore, it should be possible to procure the funding from capital expenditure and/or reserves that are invested, as it is a profitable financial investment. This avoids the political trade-offs when entering budget allocation debates.

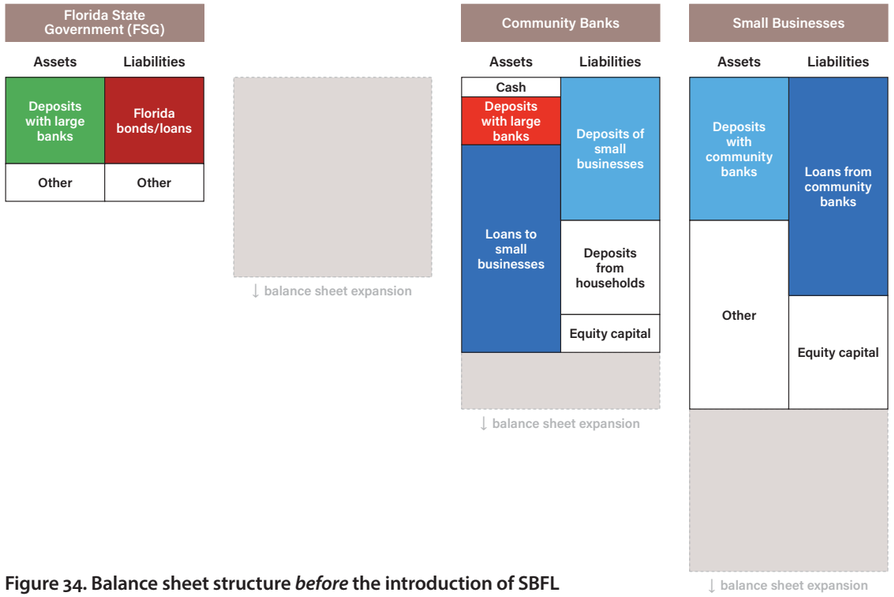


Figure 34. Balance sheet structure *before* the introduction of SBFL

SBFL would be debt-funded through a mix of deposits from community banks and the FSG and its pension funds and other institutions.[45] On the asset side, SBFL would hold loans and/or bonds issued by the FSG, loans purchased from Florida community banks, and loan participations with Florida community banks.

The balance sheet mechanics are shown in Figures 34 and 35.

We estimate the impact of setting up the SBFL to be as follows:

- SBFL would be able to purchase 20% of loans made by Florida's 66 community banks to small businesses, worth $5.4 billion, or an average of $81.8 million per community bank. This would liberate balance sheet space and would support additional lending by the community banks.
- Assuming an average loan size of $50,000 to $200,000, that would amount to between 25,000 to 100,000 new loans, and approximately the same number of small businesses supported. Considering the SBFL would have been set up with an initial injection of $500 million, that would constitute an initial multiplier of 10.8x on investment. However, after several years, the multiplication factor will be larger by an order of magnitude.

Because the SBFL would be owned by the Florida government, its charter could be drafted in such a way that specific groups (e.g., U.S. veterans) or sectors (e.g., agriculture) would be prioritized in lending decisions.

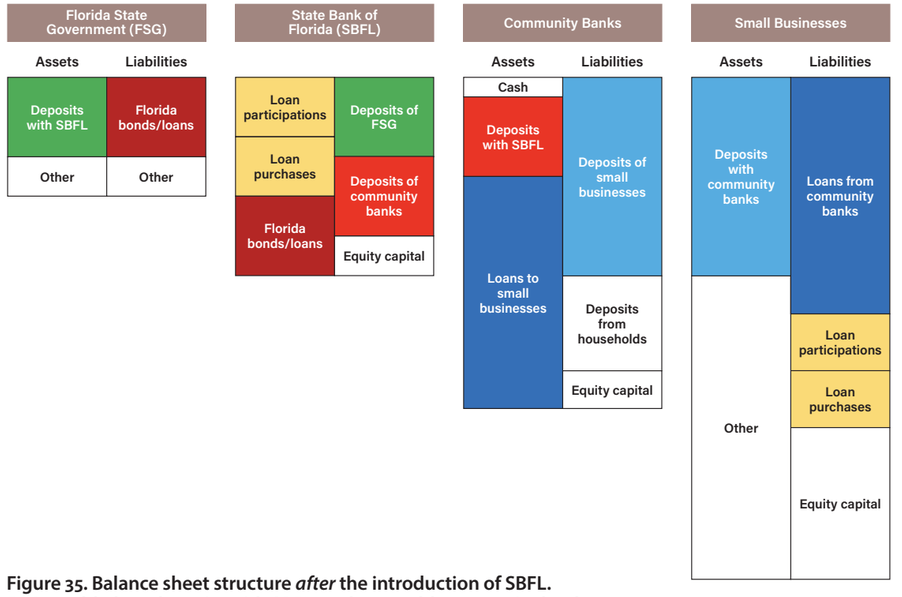


Figure 35. Balance sheet structure *after* the introduction of SBFL. FSG would place deposits with SBFL, and so would community banks. SBFL would use this funding to buy FSG bonds/loans, loan participations, and loans from community banks. Community banks would use the additional "balance sheet space" to provide more loans to small businesses.

IX. Conclusions

It is usually beneficial for the owners to create a new bank. This also applies to a State Bank of Florida.

Historically, the North American colonies were pioneers in modern monetary systems, as the colonial state governments introduced paper money in order to ensure monetary independence from oppressive outside forces. The very success of the colonial "scrip" money resulted in its suppression by the British government under King George III. The suppression of New England's successful monetary system was one of the contributing factors leading to the War of Independence.

Once again, the states in North America can act in a far-sighted and pioneering manner by establishing state-owned banks, similar to the currently only such bank, the Bank of North Dakota.

Key features of such a bank include its structure and mission, namely not to work against the existing commercial and community banks but to act as a hub bank that is supportive of them, similarly to the Federal Reserve Bank of New York acting toward the banks in Manhattan that are its owners. A state bank in Florida would have many and significant benefits (as listed in section IV), including that it would act to insulate the economy of the State of Florida from contagion threatened by external financial instability.

The United States has thrived whenever credit creation for productive business investment expanded. One mechanism to achieve this was the creation of tens of thousands of banks in the U.S. During the era of growing bank numbers, economic growth was high, job creation abounded, and there was general prosperity. However, for the past 30 years, Federal Reserve policies have acted to reduce the number of local banks and credit unions. With the decline in the number of banks, economic growth has trended down.

The establishment of the State Bank of Florida would act to halt the steady decline in the number of banks in Florida and the U.S. This, in turn, would reverse the decline in the potential economic growth rate.

The establishment of a state bank is also a crucial step to counter the ambitions of central planning bureaucracies located inside the major central banks, which seek to further increase their already vast powers and political independence via the creation of central bank digital currency.

It is recommended that the State Bank of Florida include the mission to establish and operate a state-level bullion depository, while avoiding a membership with the FDIC in order to maximize its independence from federal agencies.

Banking is one of the most profitable industries. The State Bank of Florida will be profitable and constitutes a sound investment for the State of Florida. However, the benefits abound and go beyond merely commercial attractiveness. The establishment of the State Bank of Florida is a crucial step that can be built upon in a variety of ways in order to be able to counter possible future threats to financial and economic stability and economic and political autonomy and freedoms.

Endnotes

1. Enterprises mostly start as micro or small enterprises but might grow to become large enterprises. Few start-ups (2%–9%) grow above ten employees, but they make a substantial contribution to job creation, ranging from 19% to 54%. It is ultimately only a few enterprises that grow to become larger enterprises and generate most of the new jobs. These high-growth enterprises are often referred to as transformational entrepreneurs, graduate enterprises, or gazelles, and they create vibrant businesses with jobs and income for others, beyond the scope of an individual's subsistence needs. In contrast, subsistence entrepreneurs usually do not grow but provide income and employment for the owner of the micro-enterprise and his or her family (International Labor Office, 2015, p. 10).
2. Net job creation 2004–2010 by age group of enterprises that survived. Source: De Kok et al. (2011, p. 8). Based on Amadeus/Orbis, Bureau Van Dijk.
3. In the EU, companies wishing to raise capital on public markets through the issuance of shares or bonds have a choice between two broad categories of venues: regulated markets and multilateral trading facilities. Even though both categories are open to companies of all types and sizes, regulated markets have compliance requirements that render listing costlier and more cumbersome for smaller firms (European Parliament, 2019, p. 2).
4. The collateral typically consists of business assets or equipment, real estate (both commercial and personal), accounts receivable and inventory, liquid assets from the company or a guarantor, and personal assets (FDIC, 2018, p. 42).
5. In 2009, for instance, only 5.2% of loan applications were rejected among large firms; that share was double for small firms and even three times as large among micro businesses (European Commission, 2009).
6. The term *community bank* is used generally to describe locally-owned, medium and small depository institutions that engage in highly localized traditional banking activities. There is no universal definition of a community bank, although most definitions rely upon an asset threshold set at $10B or less (see Council of Economic Advisers, 2016). Community banks should not be confused with *credit unions*. A credit union is a membership-owned cooperative organization established on the basis of its common bond (occupation, association, or geographical definition), specified by its federal or state charter. Credit unions face statutory restrictions on their customer base and commercial lending activities because, as specified in the Federal Credit Union Act of 1934 (FCU Act; 48 Stat.1216), they are formed for the purpose of promoting thrift among their members and providing them with a low-cost source of credit. Unlike community banks, credit unions have a statutory cap on their business lending activities. Conversely, a bank is a for-profit institution owned by equity holders who may not necessarily be customers (depositors or borrowers). Although it must also obtain a state or federal charter, a bank does not have similar membership and commercial lending restrictions. Community banks issue deposits, insured by the FDIC; credit unions issue "share deposits," insured by the NCUA (CRS, 2018).
7. See foe.scot/wp-content/uploads/2012/05/Edinburgh-Werner-Case-for-Local-Banks-2012.pdf
8. These authors find a negative correlation between the percent of deposits in banks with less than $500 million in total deposits and population density by state in the U.S.
9. Real estate loans constituted around 20% of the balance sheet of both small and large banks in 1985. However, they started to diverge, and while for large banks the share rose to a peak of 30% in 2008, for small banks the peak reached 50% that same year. See Board of Governors of the Federal Reserve, H.8 Assets and Liabilities of Commercial Banks in the United States (www.federalreserve.gov/datadownload/Download.aspx?rel=H8&series=5375da96d8d95fb3b5b6395771a324a9&lastobs=&from=&to=&filetype=csv&label=include&layout=seriescolumn&type=package).
10. Net exports were -3% in 1986 when the decline in the number of banks began. See fred.stlouisfed.org/series/A019RE1Q156NBEA.
11. Banking systems are typically structured in a hierarchical fashion (in "tiers"), with central banks at the top, large "money center" banks in the middle, and smaller banks at the bottom. Typically, central banks (first tier) act as bankers for big banks, which in turn act as (correspondent) banks for smaller (respondent) banks. Big banks use reserves (the central bank's liability) to settle interbank payments, while smaller banks use nostro accounts at correspondent banks to make payments to each other. At the bottom stand the rest of economic sectors, like households, non-financial firms, non-bank financial institutions, and the government. (This is a simplification. Typically, access to reserves is not restricted to large banks, and the government as well as large non-bank financial institutions have access to the books of the central bank. Similarly, firms and households tend to have accounts both at large correspondent banks as well as at small respondent banks.) Typically, the relationships extend to *credit* as well, so that only large banks are eligible counterparties for central bank open market and credit operations.
12. See, e.g., Borsuk et al. (2022) and Panizza (2022).
13. The bank was initially prohibited from opening branches, engaging in retail banking, and providing commercial lending other than farm real estate loans. Although these restrictions were relaxed in later years, to this day BND operates out of a single location in Bismarck, which limits the degree to which it can compete for customers (Kodrzycki and Elmatad, 2011).
14. See www.ndoil.org/wp-content/uploads/2021/09/Thursday-Todd-Steinwand-Petroleum-Council-September-2021.pdf
15. The number of loans distributed by BND in 2021 was 557 loans (BND, 2021).
16. Although the average share of profits that BND transfers to the state is large, the overall share of state expenditures financed by this means is fairly small. From 1971 to 2009, transfers from BND were equivalent to 0.75% of state expenditures, on average. The highest share (1.82%) occurred in 1996 (Kodrzycki and Elmatad, 2011).
17. Number of banks per 100,000 people, 2014. Source: Institute for Local Self-Reliance (ilsr.org/fighting-monopoly-power/banking/).

18. As of 2021, the U.S. had 4,236 FDIC-insured commercial banks, and a population of 332,660,077 as of December 2021.
(See www.statista.com/statistics/184536/number-of-fdic-insured-us-commercial-bank-institutions/ and www.census.gov/popclock/).
19. During the financial crisis of 2007–08, for example, BND used its access to the federal funds market to purchase loans from smaller banks in North Dakota, providing liquidity to the market. In the wake of natural disasters such as flooding or drought, the bank has channeled its resources to affected areas. During disasters, BND is said to react more quickly than the federal government (Kodrzycki and Elmatad, 2011).
20. Sources: HD.2677 (malegislature.gov/Bills/193/HD2677) and SD.1589 (malegislature.gov/Bills/193/SD1589)
21. Sources: A2536 (www.nysenate.gov/legislation/bills/2023/A2536) and S1756 (www.nysenate.gov/legislation/bills/2023/s1756)
22. Source: HB 2763 (olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB2763/Introduced)
23. Source: SB 501 (olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/SB0501/Introduced)
24. Source: SB 5509 (app.leg.wa.gov/billsummary?BillNumber=5509&Year=2023&Initiative=false)
25. Source: HB 75 (www.nmlegis.gov/Legislation/Legislation?Chamber=H&LegType=B&LegNo=75&year=22)
26. Source: A 8857 (www.nysenate.gov/legislation/bills/2021/A8857)
27. Source: HJR 205 (olis.oregonlegislature.gov/liz/2022R1/Downloads/MeasureDocument/HJR205)
28. Source: HB 240 HD1 (www.capitol.hawaii.gov/sessions/session2021/bills/HB240_HD1_.PDF)
29. Source: HB 1103 (www.capitol.hawaii.gov/sessions/session2021/Bills/HB1103_.pdf)
30. Sources: S665 (malegislature.gov/Bills/192/SD1712) and H122 (malegislature.gov/Bills/192/HD3247)
31. Sources:SB313(www.nmlegis.gov/Sessions/21%20Regular/bills/senate/SB0313.pdf) and HB 236 (nmlegis.gov/Sessions/21%20Regular/bills/house/HB0236.pdf)
32. Source: S 1055 (www.nysenate.gov/legislation/bills/2021/s1055)
33. Source: A 3309 (www.nysenate.gov/legislation/bills/2021/A3309)
34. Sources: S 1762 (www.nysenate.gov/legislation/bills/2021/S1762) and A 5782 (www.nysenate.gov/legislation/bills/2021/A5782)
35. Source: SB 399 (olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/SB339/Introduced)
36. Source: HB 2743 (olis.oregonlegislature.gov/liz/2021R1/Measures/Overview/HB2743)
37. Source: SB 5188 (apps.leg.wa.gov/billsummary?BillNumber=5188&Initiative=false&Year=2021)
38. The QTDC was tested in Japan by Werner (1992, 1993, 1994, 1997), it was later applied to the Czech Republic (Bezemer and Werner, 2009), the UK (Lyonnet and Werner, 2012; Ryan-Collins, Werner and Castle, 2016), Spain (Werner, 2014b; Bermejo-Carbonell and Werner, 2018), Germany (Kusin and Schobert, 2014), and Japan later again (Werner, 2005, 2012; Voutsinas and Werner, 2011b).
39. It is quite well-established that house prices can be explained by: (i) on the demand side, the amount of real estate loans and household mortgages (Anundsen and Jansen, 2013, p. 6, Tables 1 and 2; Werner, 1997), and (ii) on the supply side, the elasticity of supply of housing by the construction sector (ESRB, 2015, pp. 31–32; Gao, Sockin and Xiong, 2015, p. 1; Gyourko, 2009, p. 11), which in turn is influenced, among other things, by regulatory supply constraints, city level population, population density, and geographic constraints like steep topography (Glaeser, Gyourko and Saiz, 2008, pp. 36–37; Oikarinen and Valtonen, 2014).
40. In a world with high debt-to-GDP ratios, this is most welcomed.
41. Source: FDIC, deposit market share report.
42. In contrast, the BND was set up with an initial capital of $2 million in 1919 dollars, which corresponds to $25 million in today's dollars (inflation-adjusted) (Kodrzycki and Elmatad, 2011).
43. Urban Institute, 2024.
44. Local First is a consulting company specialized in setting up banks de novo, and could be of help. For more information, contact werner@local-first.org.uk
45. Assuming a 50/50 split, around $5 billion of deposits would come from community banks transferring their deposit balances from other banks, and $5 billion from FSG. For community banks, this would represent shifting around 15.2% ($5/$32.7) of their assets to SBFL, which is a reasonable figure.

Biographical Notes

Professor Richard A. Werner, MA, D.Phil. (Oxon), is a London School of Economics and Oxford-educated economist, university professor of banking and economics, authorized investment adviser, and economic adviser to governments. Previously he was professor of international banking at the University of Southampton; professor of banking and finance at De Montfort University, Leicester, England; professor of monetary economics at Goethe-University, Frankfurt, Germany; professor of finance at Fudan University, Shanghai, China; assistant professor of economics at Sophia University, Tokyo, Japan; and visiting professor at numerous universities.

Professor Werner has over 30 years of professional experience in the financial sector. He was the first Shimomura Fellow at the Development Bank of Japan in Tokyo in 1991, and chief economist of Jardine Fleming Securities (Asia) Ltd. in Tokyo since 1993. In this role he became top-ranked Japan economist in the industry's Greenwich survey and a top-3 economist in the *Institutional Investor* Survey. In 1995 he proposed a new policy to end banking crises which he called "Quantitative Easing." His book *Princes of the Yen*, on central banking, was a top bestseller in Japan in 2001. The 2003 English edition warned of the coming credit bubbles, banking crises, and recessions. Some of his academic research is among the most downloaded scientific work in the world (see www.professorwerner.org).

Between 1998 and 2004, Professor Werner advised numerous institutional and government clients, including U.S. state pension funds (State of New Jersey, Texas Teachers), financial institutions, the Asian Development Bank, the Japanese Ministry of Finance, the Thai government, and parliamentarians in a number of countries. His corporate experience includes years as a member of the Asset Allocation Committee of TelWel, a $6.2bn Japanese corporate pension fund, as Senior Managing Director and Senior Portfolio Manager at Bear Stearns Asset Management Ltd. managing the Bear Stearns Global Alpha Fund in London, as director of a Paris-based large company, and chair of the audit committee of a London Stock Exchange-listed international corporation with more than 5,000 staff. From 2010 to 2020, he was a member of the ECB Shadow Council, and since 2010 he has been involved in planning and establishing community banks and helping small banks to stay independent.

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Bibliography

Adams, R.M., & Gramlich, J.P. (2014). *Where Are All the New Banks? The Role of Regulatory Burden in New Charter Creation*. Finance and Economics Discussion Series. Washington, DC: Federal Reserve Board, Divisions of Research & Statistics and Monetary Affairs. www.federalreserve.gov/econresdata/feds/2014/files/2014113pap.pdf

Anundsen, A.K., & Jansen, E.S. (2013). Self-reinforcing effects between housing prices and credit: an extended version. Discussion Papers, No. 756, Statistics Norway, Research Department. www.econstor.eu/bitstream/10419/192738/1/dp756.pdf

Bank of England. (2021). New forms of digital money. Discussion Paper, June 7. www.bankofengland.co.uk/paper/2021/new-forms-of-digital-money

Bank of North Dakota (BND). (2021a). *Evolving: 2021 Annual Report*. bnd.nd.gov/pdf/2021_bnd_annual_report.pdf

Bank of North Dakota. (2021b). *Bank of North Dakota: Business Development Financing*. ND Petroleum Council Annual Meeting, September 23. www.ndoil.org/wp-content/uploads/2021/09/Thursday-Todd-Steinwand-Petroleum-Council-September-2021.pdf

Bermejo-Carbonell, J., & Werner, R.A. (2018). Does foreign direct investment generate economic growth? A new empirical approach applied to Spain. *Economic Geography*, 94(4):425-456. www.tandfonline.com/doi/full/10.1080/00130095.2017.1393312

Bezemer, D., & Werner, R. (2009). Disaggregated credit flows and growth in central Europe. www.semanticscholar.org/paper/Disaggregated-Credit-Flows-and-Growth-in-Central-Bezemer-Werner/d08e382b248cd9cfbd47f985bb85bac90c1e8eae

Board of Governors of the Federal Reserve System. (n.d.). H.8 Assets and Liabilities of Commercial Banks in the United States. www.federalreserve.gov/releases/h8/current/

Board of Governors of the Federal Reserve System. (2022). *Availability of Credit to Small Businesses*. www.federalreserve.gov/publications/files/sbfreport2022.pdf

Borsuk, M., Kowalewski, O., & Pisany, P. (2022). State-owned banks and international shock transmission. *ECB Working Paper Series*, No. 2661. www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2661~5a47947b05.en.pdf

Brennecke, C., Jacewitz, S., & Pogach, J. (2020). Shared destinies? Small banks and small business consolidation. *FDIC Working Paper Series*, FDIC CFR WP 2020-04. www.fdic.gov/analysis/cfr/2020/wp2020/cfr-wp2020-04.pdf

Brown, D. (2019). Spotlight on community bank lending. U.S. Small Business Administration, Office of Advocacy. cdn.advocacy.sba.gov/wp-content/uploads/2019/09/25164013/Fact-Sheet-Community-Bank-Lending.pdf

Brown, R., & Lee, N. (2014). Funding issues confronting high growth SMEs in the UK. LSE Research Online. http://eprints.lse.ac.uk/57264/

Bundesbank. (2017). The role of banks, non-banks and the central bank in the money creation process. *Deutsche Bundesbank Monthly Report*, 24.04.2017. www.bundesbank.de/en/publications/search/the-role-of-banks-non-banks-and-the-centralbank-in-the-money-creation-process-654284

Clavero, B. (2017). A contribution to the Quantity Theory of Disaggregated Credit. MPRA Paper No. 76657. Munich Personal RePEc Archive. mpra.ub.uni-muenchen.de/76657/1/MPRA_paper_76657.pdf

Collins, L. (2018). The Bank of North Dakota: reliable financing for the common good. Shareable, July 11. www.shareable.net/the-bank-of-north-dakota-reliable-financing-for-the-common-good/

Council of Economic Advisers. (2016). The performance of community banks over time. obamawhitehouse.archives.gov/sites/default/files/page/files/20160810_cea_community_banks.pdf

Congressional Research Service (CRS). (2018). Introduction to bank regulation: credit unions and community banks: a comparison. December 14. sgp.fas.org/crs/misc/IF11048.pdf

Degryse, H., Karapetyan, A., & Karmakar, S. (2019). To ask or not to ask? Bank capital requirements and loan collateralization. *Bank of England Working Paper*, No. 778. papers.ssrn.com/sol3/papers.cfm?abstract_id=3290581

De Kok, J., Vroonhof, P., Verhoeven, W., Timmermans, N., Kwaak, T., Snijders, J., & Westhof, F. (2011). Do SMEs create more and better jobs? EIM Business & Policy Research, November. files.fleetnews.co.uk/do-smes-create-more-and-better-jobs_en.pdf

Duan, K., Ivanov, P., & Werner, R. (2023). Deciphering the Chinese economic miracle: the resolution of an age-old economists' debate—and its central role in rapid economic development. *Review of Political Economy*, 37(1):202-226. www.tandfonline.com/doi/full/10.1080/09538259.2023.2180200

Duan, K., Ivanov, P., & Werner, R.A. (2024). The rise of the red dragon: the non-binary political economy of decentralised public banks. *Post-Communist Economies*, 36(4):464-481. www.tandfonline.com/doi/full/10.1080/14631377.2024.2306377#abstract

European Systemic Risk Board (ESRB). (2015). *Report on Commercial Real Estate and Financial Stability in the EU*. December. www.esrb.europa.eu/pub/pdf/other/2015-12-28_ESRB_report_on_commercial_real_estate_and_financial_stability.pdf

European Commission. (2009). Survey on the Access to Finance of Enterprises (SAFE). Short Summary for 2009. single-market-economy.ec.europa.eu/access-finance/data-and-surveys-safe_en

European Parliament. (2019) Enabling SMEs' access to capital markets. European Parliamentary Research Service (EPRS) Briefing, PE 630.311, April. www.europarl.europa.eu/RegData/etudes/BRIE/2018/630311/EPRS_BRI(2018)630311_EN.pdf

Federal Deposit Insurance Corporation (FDIC). (2018). *FDIC Small Business Lending Survey*. www.fdic.gov/bank/historical/sbls/full-survey.pdf

Federal Reserve Bank of New York. (2022). *Quarterly Trends for Consolidated U.S. Banking Organizations*. www.newyorkfed.org/research/banking_research/quarterly_trends

FRED. (n.d.). Shares of gross domestic product: net exports of goods and services. St. Louis Fed. fred.stlouisfed.org/series/A019RE1Q156NBEA

Gao, Z., Sockin, M., & Xiong, W. (2021). Learning about the neighborhood. *The Review of Financial Studies*, 34:4323-4372. wxiong.mycpanel.princeton.edu/papers/Housing.pdf

García, A., Lands, B., Liu, X., & Slive, J. (2020). The potential effect of a central bank digital currency on deposit funding in Canada. *Bank of Canada Staff Analytical Note*, 2020-15, www.bankofcanada.ca/2020/07/staff-analytical-note-2020-15/

Glaeser, E.L., Gyourko, J., & Saiz, A. (2008) Housing supply and housing bubbles. NBER Working Paper Series, Working Paper 14193, July. www.nber.org/system/files/working_papers/w14193/w14193.pdf

Goodhart, C. (1989). *Money, Information and Uncertainty*, 2nd ed. Cambridge, MA: The MIT Press.

Goodhart, C.A.E. (2017). The determination of the money supply: flexibility versus control. *Proceedings of the Money, Macroeconomics and Finance Research Group, 2016*. 85(S1):33-56. onlinelibrary.wiley.com/doi/abs/10.1111/manc.12194

Gyourko, J. (2009). The supply side of housing markets. National Bureau of Economic Research (NBER), The Reporter, No. 2, pp. 10–12. www.nber.org/reporter/2009number2/supply-side-housing-markets

Han, L., Fraser, S., & Storey, D.J. (2009). Are good or bad borrowers discouraged from applying for loans? Evidence from US small business credit markets. *Journal of Banking & Finance*, 33(2):415-424. www.sciencedirect.com/science/article/abs/pii/S0378426608001970

Havermann, A. (Forthcoming). Financial processes of the Pennsylvania Colony 1721-1764. Forthcoming in *Journal of Banking, Finance and Sustainable Development*. www.collegepress.org.uk/jbfsd/

International Labour Office. (2015). *Small and Medium-sized Enterprises and Decent and Productive Employment Creation*. International Labour Conference, 104th Session, Report IV, ILC.104/IV. www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_358294.pdf

Jagtiani, J., & Maingi, R.Q. (2019). How important are local community banks to small business lending? Evidence from mergers and acquisitions. *Federal Reserve Bank of Philadelphia Working Papers*, WP-18-18. www.philadelphiafed.org/-/media/frbp/assets/working-papers/2018/wp18-18.pdf

Kodrzycki, Y.K., & Elmatad, T. (2011). *The Bank of North Dakota: A Model for Massachusetts and Other States?* New England Public Policy Center, Research Report 11-2, May. www.bostonfed.org/-/media/Documents/Workingpapers/PDF/neppcrr1102.pdf

Kuzin, V., & Schobert, F. (2014) Why does bank credit not drive money in Germany (any more)? *Economic Modelling*, 48:41-51. www.sciencedirect.com/science/article/abs/pii/S026499931400368X

Lester, R.A. (1939). *Monetary Experiments: Early American and Recent Scandinavian*. Princeton, NJ: Princeton University Press.

Levenson, A.R., & Willard, K.L. (2000). Do firms get the financing they want? Measuring credit rationing experienced by small businesses in the U.S. *Small Business Economics*, 14(2):83-94. www.jstor.org/stable/40229065

Lyonnet, V., & Werner, R.A. (2012). Lessons from the Bank of England on "quantitative easing" and other "unconventional" monetary policies. *International Review of Financial Analysis*, 25:94-105. www.sciencedirect.com/science/article/abs/pii/S1057521912000737

Main, K. (2022) Small business statistics of 2023. *Forbes*, December 7, 2022; updated January 31, 2024. www.forbes.com/advisor/business/small-business-statistics/#sources_section

McLeay, M., Radia, A., & Thomas, R. (2014). Money creation in the modern economy. *Bank of England Quarterly Bulletin*, 2014 Q1, March 14. www.bankofengland.co.uk/quarterly-bulletin/2014/q1/money-creation-in-the-modern-economy

Mitchell, S. (2015). Measuring the impact of the Bank of North Dakota (Graphs). Institute for Local Self-Reliance. ilsr.org/articles/charts-bank-north-dakota/

Mkhaiber, A., & Werner, R.A. (2021). The relationship between bank size and the propensity to lend to small firms: new empirical evidence from a large sample. *Journal of International Money and Finance*, 110:102281. www.sciencedirect.com/science/article/pii/S0261560620302370

OECD. (1997). *Small Businesses, Job Creation and Growth: Facts, Obstacles and Best Practices*. www.oecd.org/cfe/smes/2090740.pdf

OECD. (2018). Enhancing SME access to diversified financing instruments: Plenary session 2. OECD Discussion Paper, SME Ministerial Conference, Mexico City, 22-23 February. www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Plenary-Session-2.pdf

Oikarinen, E, & Valtonen, E. (2014). Regional variation in the elasticity of supply of housing, and its determinants: the case of a small sparsely populated country. 54th Congress of the European Regional Science Association (ERSA): "Regional development & globalisation: Best practices," 26-29 August, St. Petersburg, Russia. www.econstor.eu/handle/10419/124470?locale=de

Panizza, U. (2022). State-owned commercial banks. *Journal of Economic Policy Reform*, 26(1):44-66. DOI: 10.1080/17487870.2022.2076678

Ryan-Collins, J., Werner, R.A., & Castle, J. (2016). A half-century diversion of monetary policy? An empirical horse-race to identify the UK variable most likely to deliver the desired nominal GDP growth rate. *Journal of International Financial Markets, Institutions and Money*, 43:158-176. www.sciencedirect.com/science/article/pii/S1042443116300208

S&P Global. (2021). *RatingsDirect: Bank of North Dakota*. November 9. bnd.nd.gov/pdf/sp_report_2021.pdf

Sylla, R., & Wright, R.E. (2019). Origins of the U.S. financial system. In: Diebolt, C., Haupert, M. (eds.), *Handbook of Cliometrics*, pp. 1-26. Berlin, Heidelberg: Springer. doi.org/10.1007/978-3-642-40458-0_72-1

Urban Institute. (2024). Florida's current budget. December 2024. www.urban.org/policy-centers/cross-center-initiatives/state-and-local-finance-initiative/projects/state-fiscal-briefs/florida

Voutsinas, K., & Werner, R.A. (2011). New evidence on the effectiveness of "quantitative easing" in Japan. CFS Working Paper, No. 2011/30, Goethe University Frankfurt, Center for Financial Studies (CFS), Frankfurt a. M. www.econstor.eu/bitstream/10419/57355/1/671923366.pdf

Werner, R.A. (1992). Towards a quantity theory of disaggregated credit and international capital flows. Paper presented at the Royal Economic Society Annual Conference, York, April 1993, and at the 5th Annual PACAP Conference on Pacific-Asian Capital Markets in Kuala Lumpur, June 1993.

Werner RA. (1994). Japanese foreign investment and the "land bubble." *Review of International Economics*, 2(2):166-178. onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9396.1994.tb00038.x

Werner, R.A. (1997). Towards a new monetary paradigm: a quantity theorem of disaggregated credit, with evidence from Japan. *Kredit und Kapital*, 30(2):276-309. core.ac.uk/download/pdf/1455293.pdf

Werner, R.A. (2005). *New Paradigm in Macroeconomics: Solving the Riddle of Japanese Macroeconomic Performance*. Basingstoke: Palgrave Macmillan.

Werner, R.A. (2012a). *How to Make Banks Socially Useful: The Case for Local Banking and Local Money*. University of Southampton School of Management, Centre for Bank, Finance & Sustainable Development, April 20. foe.scot/wp-content/uploads/2012/05/Edinburgh-Werner-Case-for-Local-Banks-2012.pdf

Werner, R.A. (2012b). Towards a new research programme on "banking and the economy" – implications of the Quantity Theory of Credit for the prevention and resolution of banking and debt crises. *International Review of Financial Analysis*, 25(C):1-17. www.sciencedirect.com/science/article/abs/pii/S1057521912000555

Werner, R.A. (2014a). Can banks individually create money out of nothing? – the theories and the empirical evidence. *International Review of Financial Analysis*, 36:1-19. www.sciencedirect.com/science/article/pii/S1057521914001070

Werner, R.A. (2014b). Enhanced debt management: solving the eurozone crisis by linking debt management with fiscal and monetary policy. *Journal of International Money and Finance*, 49(B):443-469. www.sciencedirect.com/science/article/pii/S0261560614001132

Zhou, L. (2023). Small business statistics: the ultimate list in 2023. January 12, 2023; updated November 6, 2024. www.luisazhou.com/blog/small-business-statistics/

Other Sources

Conference of State Bank Supervisors. (2022). *CSBS 2022 National Survey of Community Banks*. www.csbs.org/sites/default/files/2022-09/2022%20CSBS%20National%20Survey%20of%20Community%20Banks.pdf

Department of Financial Protection & Innovation (DFPI). (2019). Public banks. dfpi.ca.gov/public-banks/

Fohlin, C., & Jaremski, M. (2015). Bank concentration in the United States, 1800–1914. www.aeaweb.org/conference/2016/retrieve.php?pdfid=14014&tk=YTtQE235

McCord, R., Prescott, E.S., & Sablik, T. (2015). *Explaining the Decline in the Number of Banks since the Great Recession*. Federal Reserve Bank of Richmond, EB15-03, March. www.richmondfed.org/-/media/richmondfedorg/publications/research/economic_brief/2015/pdf/eb_15-03.pdf

Appendix A: Deposit Market Shares for Florida

Institution Name	State (Hqrtd)	Charter	OUTSIDE OF MARKET		INSIDE OF MARKET		
			No. of offices	Deposits ($ooo)	No. of offices	Deposits ($ooo)	Market share
Wells Fargo Bank, National Association	SD	Federal	3,832	1,311,434,772	472	91,762,228	11.04%
JPMorgan Chase Bank, National Association	OH	Federal	4,470	1,932,613,203	411	76,137,797	9.16%
Truist Bank	NC	State	1,490	321,312,138	441	76,099,862	9.16%
Raymond James Bank	FL	State	0	0	1	36,947,881	4.45%
EverBank, National Association	FL	Federal	1	0	11	29,316,720	3.53%
Regions Bank	AL	State	990	103,936,895	272	25,006,105	3.01%
Citibank, National Association	SD	Federal	605	719,776,000	53	23,587,000	2.84%
TD Bank, National Association	DE	Federal	1,007	266,451,323	167	23,632,604	2.84%
BankUnited, National Association	FL	Federal	5	6,524,714	52	21,512,497	2.59%
City National Bank of Florida	FL	Federal	0	0	31	20,968,845	2.52%
PNC Bank, National Association	DE	Federal	2,149	404,461,830	186	18,298,351	2.20%
Fifth Third Bank, National Association	OH	Federal	903	153,789,008	175	18,253,027	2.20%
SouthState Bank, National Association	FL	Federal	161	23,374,209	93	13,821,234	1.66%
Seacoast National Bank	FL	Federal	0	0	77	12,120,841	1.46%
First Horizon Bank	TN	State	338	53,633,995	77	11,769,399	1.42%
Synovus Bank	GA	State	162	39,201,891	85	11,543,012	1.39%
Valley National Bank	NJ	Federal	188	41,041,080	43	9,284,429	1.12%
Centennial Bank	AR	State	143	10,001,219	84	7,458,875	0.90%
Amerant Bank, National Association	FL	Federal	6	545,372	20	7,321,099	0.88%
The Northern Trust Company	IL	State	38	41,181,881	20	6,978,793	0.84%
Ameris Bank	GA	State	119	15,943,578	49	5,630,614	0.68%
Ocean Bank	FL	State	0	0	23	5,561,808	0.67%
Hancock Whitney Bank	MS	State	151	24,427,950	33	5,029,497	0.61%
Bank OZK	AR	State	188	25,023,866	42	4,919,797	0.59%
HSBC Bank USA, National Association	VA	Federal	19	120,272,983	2	4,149,100	0.50%
Bradesco Bank	FL	State	0	0	1	3,707,447	0.45%
Popular Bank	NY	State	28	8,242,172	12	3,618,666	0.44%
First Federal Bank	FL	Federal	2	109,178	23	3,421,283	0.41%
Capital City Bank	FL	State	15	445,425	53	3,238,912	0.39%
Citizens First Bank	FL	State	0	0	18	3,269,418	0.39%
Flagstar Bank, National Association	NY	Federal	393	76,488,672	26	3,193,348	0.38%
Banesco USA	FL	State	1	524,290	5	2,893,840	0.35%
Third Federal Savings and Loan Association of Cleveland	OH	Federal	21	7,349,323	16	2,826,103	0.34%
FineMark National Bank & Trust	FL	Federal	3	331,506	11	2,678,944	0.32%
The Bank of Tampa	FL	State	0	0	13	2,657,817	0.32%
Banco do Brasil Americas	FL	State	0	0	4	2,543,468	0.31%

Institution Name	State (Hqrtd)	Charter	OUTSIDE OF MARKET		INSIDE OF MARKET		
			No. of offices	Deposits ($000)	No. of offices	Deposits ($000)	Market share
BMO Bank National Association	IL	Federal	1,015	204,313,259	18	2,489,967	0.30%
First-Citizens Bank & Trust Company	NC	State	512	148,923,144	28	2,463,651	0.30%
United Community Bank	SC	State	171	21,196,561	22	2,218,022	0.27%
ServisFirst Bank	AL	State	22	11,129,778	8	2,153,098	0.26%
Safra National Bank of New York	NY	Federal	1	6,221,541	3	2,071,146	0.25%
U. S. Century Bank	FL	State	0	0	10	2,073,662	0.25%
Cadence Bank	MS	State	345	35,947,313	18	1,911,345	0.23%
Crews Bank & Trust	FL	State	0	0	20	1,916,815	0.23%
FirstBank Puerto Rico	PR	State	65	14,672,028	9	1,650,530	0.20%
Cogent Bank	FL	State	0	0	9	1,658,618	0.20%
One Florida Bank	FL	State	0	0	6	1,623,507	0.20%
Trustmark National Bank	MS	Federal	165	14,095,208	15	1,444,855	0.17%
Israel Discount Bank of New York	NY	State	6	8,730,287	1	1,394,518	0.17%
The First Bank	MS	State	92	5,238,383	23	1,396,127	0.17%
Citizens Bank and Trust	FL	State	0	0	16	1,298,300	0.16%
KeyBank National Association	OH	Federal	960	147,987,068	3	1,286,741	0.15%
BayFirst National Bank	FL	Federal	0	0	12	1,042,958	0.13%
TrustCo Bank	NY	Federal	87	4,249,736	51	1,027,245	0.12%
First State Bank of the Florida Keys	FL	State	0	0	10	1,022,589	0.12%
Bank of Central Florida	FL	State	0	0	6	1,003,333	0.12%
Pacific National Bank	FL	Federal	0	0	4	998,267	0.12%
International Finance Bank	FL	State	1	85,877	2	912,135	0.11%
Grove Bank & Trust	FL	State	0	0	5	935,685	0.11%
Helm Bank USA	FL	State	0	0	1	929,689	0.11%
Brannen Bank	FL	State	0	0	12	883,528	0.11%
Sanibel Captiva Community Bank	FL	State	0	0	8	805,040	0.10%
Prime Meridian Bank	FL	State	0	0	4	791,933	0.10%
Interaudi Bank	NY	State	1	1,250,145	1	758,561	0.09%
Liberty Savings Bank, F.S.B.	OH	Federal	1	101,295	5	739,407	0.09%
United Southern Bank	FL	State	0	0	14	769,166	0.09%
OptimumBank	FL	State	0	0	3	763,422	0.09%
Axiom Bank, National Association	FL	Federal	0	0	7	753,065	0.09%
Mainstreet Community Bank of Florida	FL	State	0	0	8	736,838	0.09%
Terrabank, National Association	FL	Federal	0	0	4	706,669	0.09%
First Foundation Bank	CA	State	23	10,077,430	7	701,369	0.08%
First American Bank	IL	State	53	4,191,119	6	686,234	0.08%
Winter Park National Bank	FL	Federal	0	0	2	694,231	0.08%
Newtek Bank, National Association	FL	Federal	0	0	1	663,678	0.08%
First Bank	FL	State	0	0	7	662,062	0.08%
Heartland National Bank	FL	Federal	0	0	4	627,676	0.08%
Citizens Bank, National Association	RI	Federal	1,009	179,508,423	6	558,044	0.07%

Institution Name	State (Hqrtd)	Charter	OUTSIDE OF MARKET		INSIDE OF MARKET		
			No. of offices	Deposits ($000)	No. of offices	Deposits ($000)	Market share
Climate First Bank	FL	State	0	0	3	620,887	0.07%
Flagship Bank	FL	State	0	0	6	574,559	0.07%
Marine Bank & Trust Company	FL	State	0	0	5	568,167	0.07%
Republic Bank & Trust Company	KY	State	40	4,586,074	7	527,945	0.06%
American Momentum Bank	TX	State	18	1,518,900	11	526,471	0.06%
PeoplesSouth Bank	GA	State	19	527,018	14	531,546	0.06%
FNBT BANK	FL	State	0	0	10	526,839	0.06%
Intercredit Bank, National Association	FL	Federal	0	0	5	504,015	0.06%
Intracoastal Bank	FL	State	0	0	2	489,768	0.06%
Sunrise Bank	FL	State	0	0	4	459,770	0.06%
Comerica Bank	TX	State	374	63,217,921	7	393,079	0.05%
Renasant Bank	MS	State	152	13,989,741	9	432,908	0.05%
Busey Bank	IL	State	59	9,626,757	3	409,079	0.05%
United Fidelity Bank, fsb	IN	Federal	20	5,040,185	3	434,772	0.05%
Community Bank of Mississippi	MS	State	48	3,816,619	6	403,456	0.05%
Barwick Banking Company	GA	State	2	57,827	3	397,144	0.05%
Sunstate Bank	FL	State	0	0	3	452,255	0.05%
Florida Capital Bank, National Association	FL	Federal	0	0	5	441,937	0.05%
American National Bank	FL	Federal	0	0	1	387,003	0.05%
Edison National Bank	FL	Federal	0	0	4	373,662	0.04%
Paradise Bank	FL	State	0	0	3	348,495	0.04%
The First National Bank of Mount Dora	FL	Federal	0	0	3	329,196	0.04%
First National Bank of Pasco	FL	Federal	0	0	5	294,628	0.04%
Manufacturers and Traders Trust Company	NY	State	993	163,469,504	2	220,410	0.03%
City National Bank	CA	Federal	64	76,162,557	1	244,138	0.03%
SmartBank	TN	State	38	4,083,264	4	240,261	0.03%
ENCORE BANK	AR	State	18	2,733,390	1	222,216	0.03%
Stearns Bank National Association	MN	Federal	4	2,128,677	3	249,099	0.03%
Amerasia Bank	NY	State	3	478,220	4	210,926	0.03%
Millennium Bank	TN	State	6	231,462	4	238,208	0.03%
First National Bank of Coffee County	GA	Federal	1	214,107	4	227,161	0.03%
First Colony Bank of Florida	FL	State	0	0	1	284,238	0.03%
BankFlorida	FL	State	0	0	5	283,702	0.03%
TCM Bank, National Association	FL	Federal	0	0	1	276,277	0.03%
Anchor Bank	FL	State	0	0	5	261,597	0.03%
Gulfside Bank	FL	State	0	0	1	257,667	0.03%
Central Bank	FL	State	1	21,162	3	226,095	0.03%
Desjardins Bank, National Association	FL	Federal	0	0	3	243,494	0.03%
Community Bank of the South	FL	State	0	0	3	232,908	0.03%
Interamerican Bank, A FSB	FL	Federal	0	0	5	227,219	0.03%

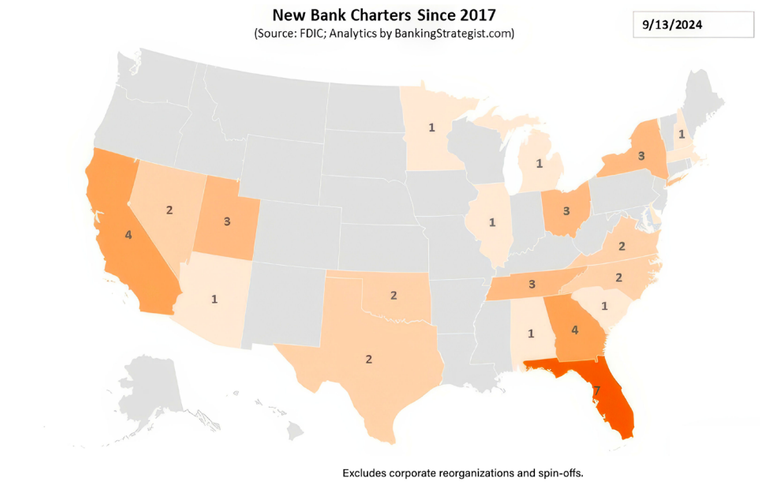
Institution Name	State (Hqrtd)	Charter	OUTSIDE OF MARKET		INSIDE OF MARKET		
			No. of offices	Deposits ($ooo)	No. of offices	Deposits ($ooo)	Market share
DLP Bank	FL	State	0	0	3	226,549	0.03%
Santander Bank, N.A.	DE	Federal	404	75,205,592	1	159,285	0.02%
Beal Bank USA	NV	State	9	9,206,973	2	159,804	0.02%
Lake Forest Bank & Trust Company, National Association	IL	Federal	7	6,106,284	2	162,869	0.02%
Thomasville National Bank	GA	Federal	3	1,324,058	1	198,599	0.02%
PrimeSouth Bank	GA	State	7	995,342	1	132,367	0.02%
United Bank	AL	State	16	832,896	3	172,972	0.02%
CCB Community Bank	AL	State	2	441,585	3	152,562	0.02%
First Port City Bank	GA	State	3	329,811	2	168,363	0.02%
TC FEDERAL BANK	GA	Federal	2	233,909	2	162,022	0.02%
First Southern Bank	GA	State	3	133,981	3	151,886	0.02%
Lafayette State Bank	FL	State	0	0	4	207,692	0.02%
Locality Bank	FL	State	0	0	1	199,598	0.02%
Waterfall Bank	FL	State	0	0	1	188,147	0.02%
Surety Bank	FL	State	0	0	3	186,492	0.02%
Madison County Community Bank	FL	State	0	0	2	167,122	0.02%
Natbank, National Association	FL	Federal	0	0	4	165,921	0.02%
Commerce Bank & Trust	FL	State	0	0	1	155,303	0.02%
First National Bank Northwest Florida	FL	Federal	0	0	2	147,550	0.02%
Cypress Bank & Trust	FL	State	0	0	4	144,564	0.02%
PNB Community Bank	FL	State	0	0	3	142,858	0.02%
Evermore Bank	FL	State	0	0	2	139,971	0.02%
Eastern National Bank	FL	Federal	0	0	4	139,102	0.02%
The Warrington Bank	FL	State	0	0	4	136,444	0.02%
Bank of Pensacola	FL	State	0	0	2	129,334	0.02%
U.S. Bank National Association	OH	Federal	2,242	527,110,070	2	79,032	0.01%
The Huntington National Bank	OH	Federal	1,017	159,156,551	1	69,980	0.01%
CIBC Bank USA	IL	State	23	43,735,362	1	56,453	0.01%
Enterprise Bank & Trust	MO	State	41	12,358,347	1	45,250	0.01%
Woodforest National Bank	TX	Federal	762	7,988,085	10	64,333	0.01%
ConnectOne Bank	NJ	State	22	7,495,690	1	116,930	0.01%
First American Trust, FSB	CA	Federal	9	6,016,309	1	114,771	0.01%
Vista Bank	TX	State	18	1,847,929	1	97,610	0.01%
MidSouth Bank	AL	State	8	503,153	4	120,621	0.01%
Southeastern Bank	GA	State	8	429,574	2	80,987	0.01%
Gulf Atlantic Bank	FL	State	0	0	2	120,704	0.01%
Bank of Belle Glade	FL	State	0	0	1	116,905	0.01%
Peoples Bank of Graceville	FL	State	0	0	1	111,150	0.01%
Century Bank of Florida	FL	State	0	0	1	94,658	0.01%
First National Bank of Wauchula	FL	Federal	0	0	1	78,109	0.01%

Institution Name	State (Hqrtd)	Charter	OUTSIDE OF MARKET		INSIDE OF MARKET		
			No. of offices	Deposits ($ooo)	No. of offices	Deposits ($ooo)	Market share
Gulf Coast Business Bank	FL	State	0	0	1	73,841	0.01%
Synchrony Bank	UT	Federal	3	85,532,894	1	0	0.00%
Pinnacle Bank	TN	State	139	39,941,367	2	28,813	0.00%
BNY Mellon, National Association	PA	Federal	21	25,646,000	6	0	0.00%
Commerce Bank	MO	State	157	24,686,444	1	560	0.00%
Wilmington Savings Fund Society, FSB	DE	Federal	94	16,651,602	1	0	0.00%
The Central Trust Bank	MO	State	175	14,912,107	1	34,399	0.00%
Nicolet National Bank	WI	Federal	59	7,364,580	1	1,105	0.00%
1st Source Bank	IN	State	79	7,156,209	1	40,218	0.00%
BankPlus	MS	State	82	6,633,908	1	29,121	0.00%
First Security Bank	AR	State	78	6,216,446	1	4,960	0.00%
Emigrant Bank	FL	State	5	4,598,087	1	5,786	0.00%
United Community Bank	IL	State	45	3,032,541	1	11,690	0.00%
First Bank	NJ	State	25	2,960,742	1	6,892	0.00%
Metro City Bank	GA	State	19	2,764,748	1	16,430	0.00%
Sunwest Bank	UT	State	8	2,549,272	1	31,874	0.00%
IncredibleBank	WI	State	16	1,689,432	1	41,411	0.00%
Fieldpoint Private Bank & Trust	CT	State	3	892,262	1	23,146	0.00%
Belmont Bank & Trust Company	IL	State	4	770,361	1	19,832	0.00%
OneUnited Bank	MA	State	5	486,355	1	25,149	0.00%
Pineland Bank	GA	State	8	393,762	1	39,240	0.00%
American Commerce Bank, National Association	GA	Federal	3	355,213	1	39,414	0.00%
First National Banker's Bank	LA	Federal	4	297,227	1	41,197	0.00%
First National Bank of Decatur County	GA	Federal	3	276,173	1	7,126	0.00%
Ipava State Bank	IL	State	6	181,114	1	2,103	0.00%
Anthem Bank & Trust	LA	Federal	3	161,805	1	17,342	0.00%
Southeast First National Bank	GA	Federal	2	53,056	1	71	0.00%
Wilmington Trust, National Association	DE	Federal	43	5,851	5	0	0.00%
The Bank of New York Mellon Trust Company, National Association	CA	Federal	9	1,073	1	0	0.00%
CIBC National Trust Company	GA	Federal	13	629	2	0	0.00%
Members Trust Company	FL	Federal	3	0	1	500	0.00%

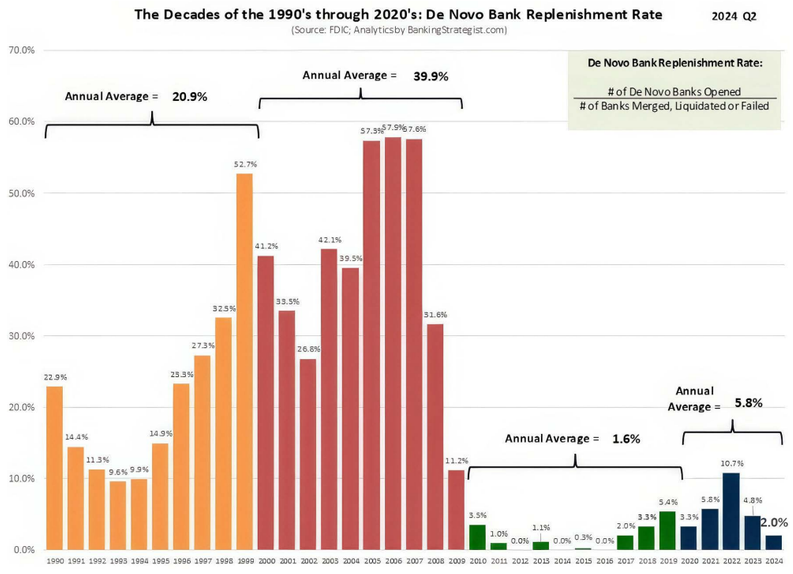
Total number of Institutions in the Market: 189			32,841	9,737,525,315	4,244	831,131,222	100

Source: FDIC, deposit market share report.

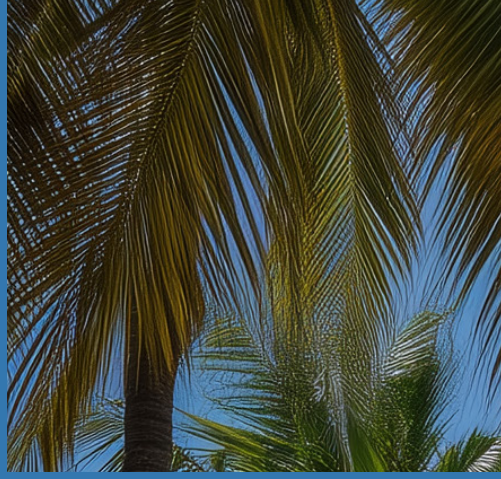
Appendix B. U.S. De Novo Bank Statistics



Number of new banks set up since 2017
Source: Banking Strategist



US bank replenishment rate
Source: Banking Strategist




Crestview
DeFuniak Springs
Bonifay
Chipley
Marianna
Lake Seminole
Ferry Pass
Milton
Pensacola
Fort Walton Beach
Quincy
Monticello
Madison
Jasper
Blountstown
Bristol
TALLAHASSEE
Panama City
Crawfordville
Perry
Live Oak
Lake City
Lake Butler
Starke
Macclenny
Jacksonville
Fernandina Beach
Jacksonville Beach
Green Cove Springs
St. Augustine
Mayo
Port St. Joe
Apalachicola
Alachua
Gainesville
Cross City
Trenton
Bronson
Palatka
Bunnell
Ormond Beach
Daytona Beach
Ocala
De Land
New Smyrna Beach
Deltona
Homosassa Springs
Inverness
Eustis
Tavares
Sanford
Bushnell
Apopka
Brooksville
Orlando
Titusville
Cape Canaveral
Merritt Island
Bayonet Point
New Port Richey
Kissimmee
Tarpon Springs
Melbourne
Palm Bay
Dunedin
Clearwater
Largo
Tampa
Lakeland
Brandon
Bartow
Lake Kissimmee
Saint Petersburg
Sebastian
Vero Beach
Wauchula
Sebring
Fort Pierce
Bradenton
Sarasota
Port St. Lucie
Okeechobee
Arcadia
Stuart
Port Charlotte
Punta Gorda
Lake Okeechobee
Jupiter
Englewood
Moore Haven
La Belle
Wellington
West Palm Beach
Belle Glade
Lake Worth
Boynton Beach
Delray Beach
Fort Myers
Lehigh Acres
Cape Coral
Boca Raton
Immokalee
Bonita Springs
Coral Springs
Fort Lauderdale
Naples
Golden Gate
Pembroke Pines
Hollywood
Hialeah
Miami
Miami Beach
Kendall
Key Largo
Islamorada
Marathon
Florida Keys
Key West