CLGFP Report 2025-01

THE CASE FOR A STATE BANK OF MICHIGAN

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The **MSUE Center for Local Government Finance and Policy (CLGFP)** at Michigan State University, located within the MSU Department of Agricultural, Food, and Resource Economics and in partnership with MSU Extension, was founded in 2015 to support communities in their efforts to efficiently deliver critical public services that promote health, safety, and well-being. The Center works to enhance decision-making for public officials in communities of all sizes through a diverse offering of training, engagement, and applied research opportunities.

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Executive summary

This document presents to State legislators and senior State civil servants in Michigan the case for setting up a *State Bank of Michigan* ("SBM"). SBM would act as a second-tier bank, interposed between the Federal Reserve Bank of Chicago ("FRBC") and the Michigan State Government ("MSG") on the one hand, and small banks (community banks, credit unions, etc.) operating in Michigan on the other.

The goal of SBM is not to compete with small banks for loan and deposit market shares, but to support them with loan participations and purchases. Given that, as has been found, small banks and small firms depend on each other in a symbiotic relationship, setting up SBM would help support small businesses in Michigan access funding and deposit markets, thus helping the economy of Michigan.

Some of the key takeaways are:

- Setting up SBM would cost less than 0.62% of the State of Michigan's annual expenditures for FY 2024.[1] Meanwhile, the funds should be procured from reserves and/or investments, as they constitute capital investment in the financial infrastructure of the State. Moreover, decision-holders need to be aware that only a one-off establishment investment is required. After this, SBM will not only be able to pay for itself, but as a profitable enterprise distribute dividends every year to the State as owner.
- SBM would expand the amount of funding available to Michigan's 70 community banks (defined as those with total deposits <$1 billion and with >50% of their deposits booked in Michigan) 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.
- SBM 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 for larger volume lending operations, as well as other forms of backing that will make them less dependent on the Federal Reserve System.
- SBM will be able to act as banker to the Michigan State Government (MSG), accepting deposits from it, effecting payments and transfers and providing loans to the State. It will also be able to provide local expertise, which is important when MSG negotiates with out of state financial institutions.

[1] As of FY 2024, the Michigan state budget included $81.bn in total spending (Urban Institute).

- The number of community banks in Michigan has fallen by 68% since 1990. The Michigan banking system is relatively concentrated: 10 banks account for 82.2% of the deposit market (above the U.S. average of 60%).
- Banking system concentration is bad for small firms, which depend on bank funding and particularly on bank loans from *small* banks ("community banks").
- SBM 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 and has enabled North Dakota to deliver on economic performance targets.
- SBM would be an important safeguard against recent initiatives 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 irreversibly damaging deposit outflows from private bank deposits into the central bank balance to CBDC accounts.
- Normalised interest rates provide an ideal environment for starting a new bank: Banking is profitable and double-digit returns on equity can be expected with confidence.
- SBM can act as a bullion depositary for the State and its citizens. Furthermore, it will be an institution with the expertise and technology to react swiftly and flexibly to unexpected changes in the economic environment or emergencies. For instance, in certain emergency situations it may be helpful to implement a local and independent mutual credit settlement and payments system not affected by events in New York, Chicago or the rest of the world. Such a back-up system could be made to operate as a de facto local currency, and could easily be established, if needed, centering on SBM.

1. Introduction

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

The SBM is modelled 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 ample and consistent funding to local small and medium-sized enterprises (SMEs). Although it has played various roles since its founding in 1919, BND's most important role has recently been to serve 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). As a result, North Dakota has not suffered the same rapid decline in the number of small banks that has been seen in other states. Unfortunately, the policies of the central planners at the Federal Reserve have had the consistent result of forcing small banks to merge, reducing the number of banks by many thousand in the last several decades alone.

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

In Section 2 the important role of small, local community banks is explained, particularly for the financial health of small non-financial firms. For this, developments in the structure of the US banking system, including the state of Michigan, are reviewed from a historical perspective.

Section 3 describes the essential model of a sovereign bank.

Section 4 describes the benefits of establishing the State Bank of Michigan for the economy and people of Michigan.

Section 5 shows the benefits of the State Bank of Michigan from a risk management perspective to counteract current tendencies.

Section 6 reviews the history of state banks in the USA and elsewhere.

Section 7 shows some research findings on the benefits of local, productive, bank-based lending, for GDP growth, employment and for avoiding asset bubbles.

Section 8 describes our proposed solution, how the State Bank of Michigan would work and some of the benefits it would bring to Michigan.

2. Community banks and the U.S. economy

2.1 The importance of small businesses

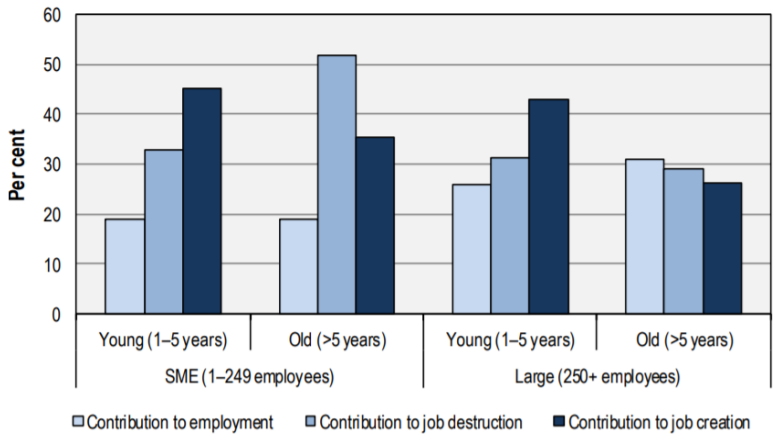
Today's globalized economies may seem to be dominated by large corporations. While the large firms are surely influential, especially thanks to their lobbying efforts in Congress and with the unelected EU bureaucrats in Brussels crafting EU legislation, in terms of their contribution to the economy and especially employment, small firms are more important.

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 30-70% of value added, 15-50% of exports, 60-70% 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 that,

> "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" (ibid., p. 9)

The following figure is taken from that same report.



Employment, job creation and destruction by enterprise age and size. OECD sample (2001–2011). Source: International Labour Office (2015, p. 10, Fig. 2.6).

Also, while young enterprises are "less likely to survive than older enterprises", "the surviving young enterprises tend to have higher employment growth rates" (De Kok et al., 2011,

p. 8). The second effect outweighs the first. Furthermore, the report adds that it is fast-growing SMEs that make the bulk of the contribution to job creation.[2] 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.[3] The likelihood of the survival of start-ups increases with their access to credit (FDIC, 2018, p. 45).

2.2 The importance of community banks for small businesses

Raising external funding is not easy for SMEs. There are a number of well-recognised reasons for this. Unlike large firms, SMEs cannot access regulated capital markets at an affordable cost, for minimum fees are too high to make small denomination issues workable (European Parliament, 2019, p. 2).[4] Fees by underwriters and securities firms organizing initial public offerings are substantial. In addition, stock market listings or bond origination and distribution in practice require a certain track record. Furthermore, the due diligence required, including the legal and other fees have to be earned back – which is only possible if the issuance volume is large enough. That means in practice it is out of reach for small firms.

Being unable to access capital markets, SMEs tend to first borrow from family and friends, but the amounts tend to be smaller in the case of such 'internal' funding. The main source of external funding for small firms are therefore banks (OECD, 2018, p. 10; FDIC, 2018, p. 18). According to the Federal Reserve's *Availability of Credit to Small Businesses* report:

> "small 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" (Board of Governors of the Federal Reserve, 2022, p. 30)

Banks, like most lenders, typically ask for collateral[5] to reduce the loss given default of the borrower (it is estimated that around 50–70% of loans to non-financial firms are collateralized), but unlike larger firms, SMEs often do not have good quality collateral to offer (Degryse, Karapetyan and Karmakar, 2019, p. 1). The top panel in the figure below shows data for U.S. banks. For large denomination loans, the collateralization ratio (defined as the

[2] 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).

[3] 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

[4] 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 cumbersome for smaller firms (European Parliament, 2019, p. 2).

[5] 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).

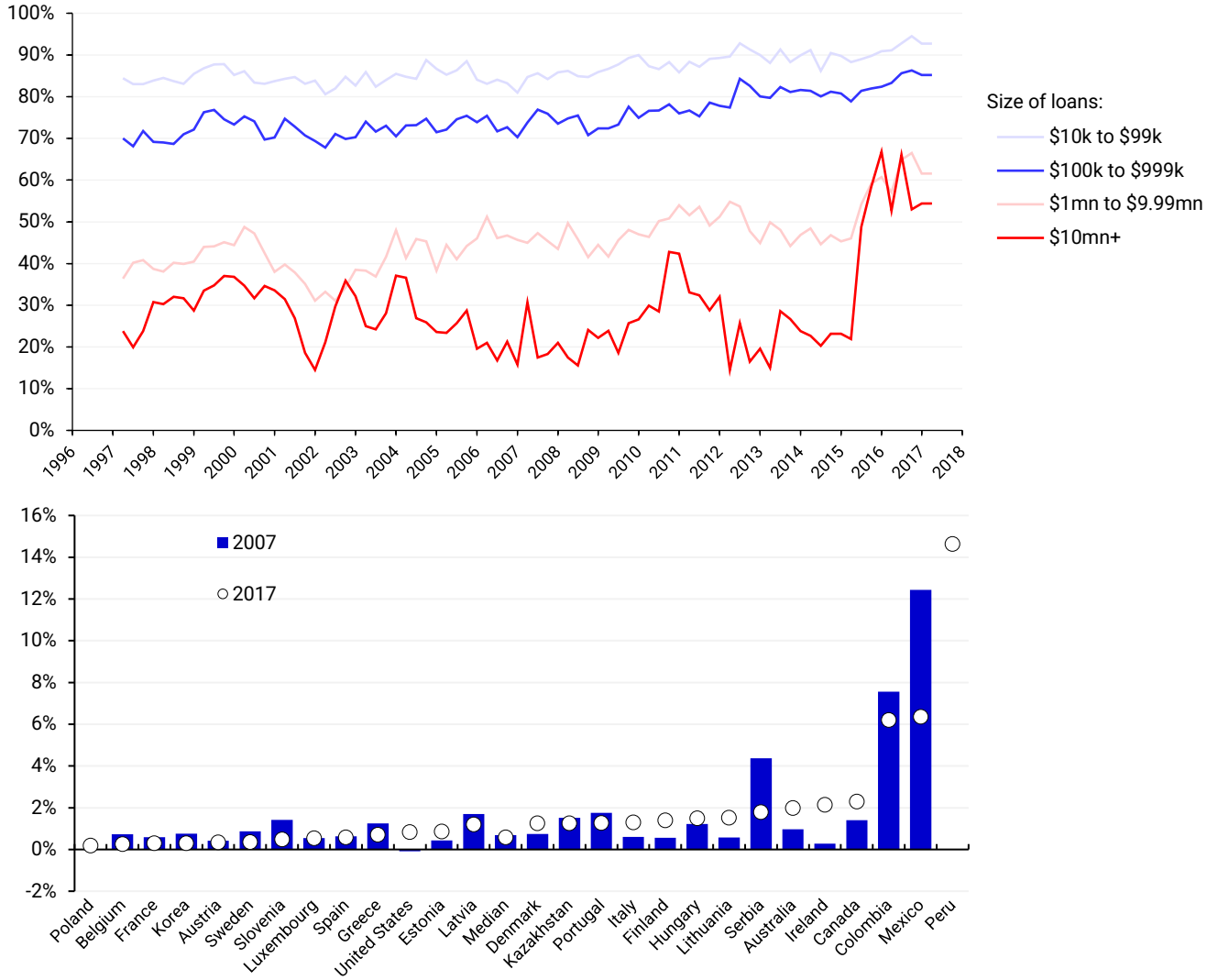
collateral posted as a percentage of the loan principal amount) is much lower compared to small or micro loans.

The availability of collateral is one reason why banks prefer to deal with larger firms (OECD, 2018, p. 6; Brown and Lee, 2014, p. 9). Another reason is that checking a loan application is not less work when the applicant firm is small. To the contrary, it may be more work, as there may not be an external credit rating. Despite a likely higher cost in terms of staff resources and time, loans to small firms will most likely produce lower interest revenue from the loan, for the simple reason that the loan size is proportional to company size. Since the absolute take by the bank is larger in the case of large loans to large firms, banks tend to prefer these.

To compensate for this, banks tend to charge SMEs higher interest rates (OECD, 2018, p. 8)[6] compared to large firms with better collateral or a longer credit history or a credit rating (see bottom panel below), and SME loan applications are rejected more frequently (European Commission, 2009).[7]

[6] 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).

[7] 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)



Top: 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).
Bottom: Interest rate spreads between loans to SMEs and to large firms. Source: *Financing SMEs and Entrepreneurs 2020* © OECD 2020

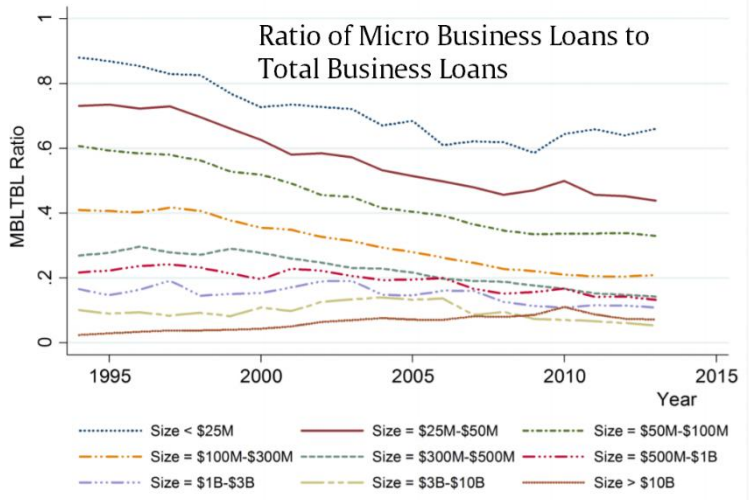
Despite the fact that SMEs are reliant on bank loans to a higher extent than larger firms, the unattractive terms at which banks *agree* to lend to them result in SMEs applying less frequently and therefore receiving fewer loans relative to larger firms. Many SMEs are known to be *discouraged* in the first place, and some of them never attempt to borrow from banks. Evidence from the US 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).

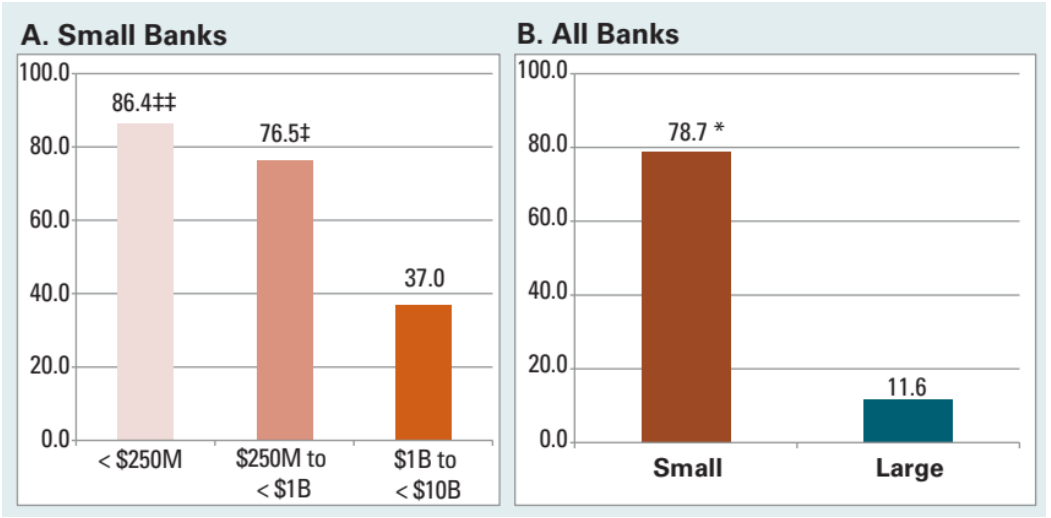
Small banks are more flexible in underwriting start-up loans (FDIC, 2018, p. 45). For example, whereas 69.8% of large banks require a minimum loan amount for their loans to small businesses, only 14.8% of small banks do. Similarly, the percentage of large banks offering standardized lending products to small firms in 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, 2022, p. 35).

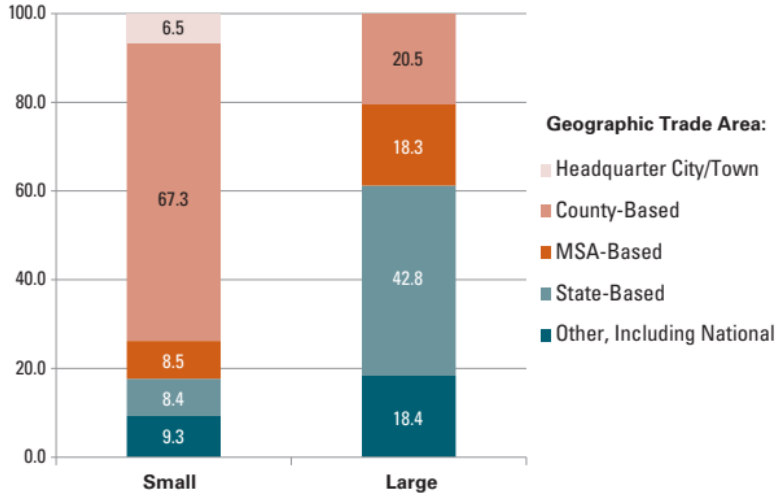
As a result, *small* banks ("community banks"[8]) tend to have *small* businesses as their counterparties, both as borrowers and as depositors. While big banks tend to deal with bigger customers, small banks tend to deal with smaller counterparties (Mkhaiber and Werner, 2021). This is shown in the left panel below. The large 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.

The right panel, 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. Finally, the panel at the bottom 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.

[8] 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).





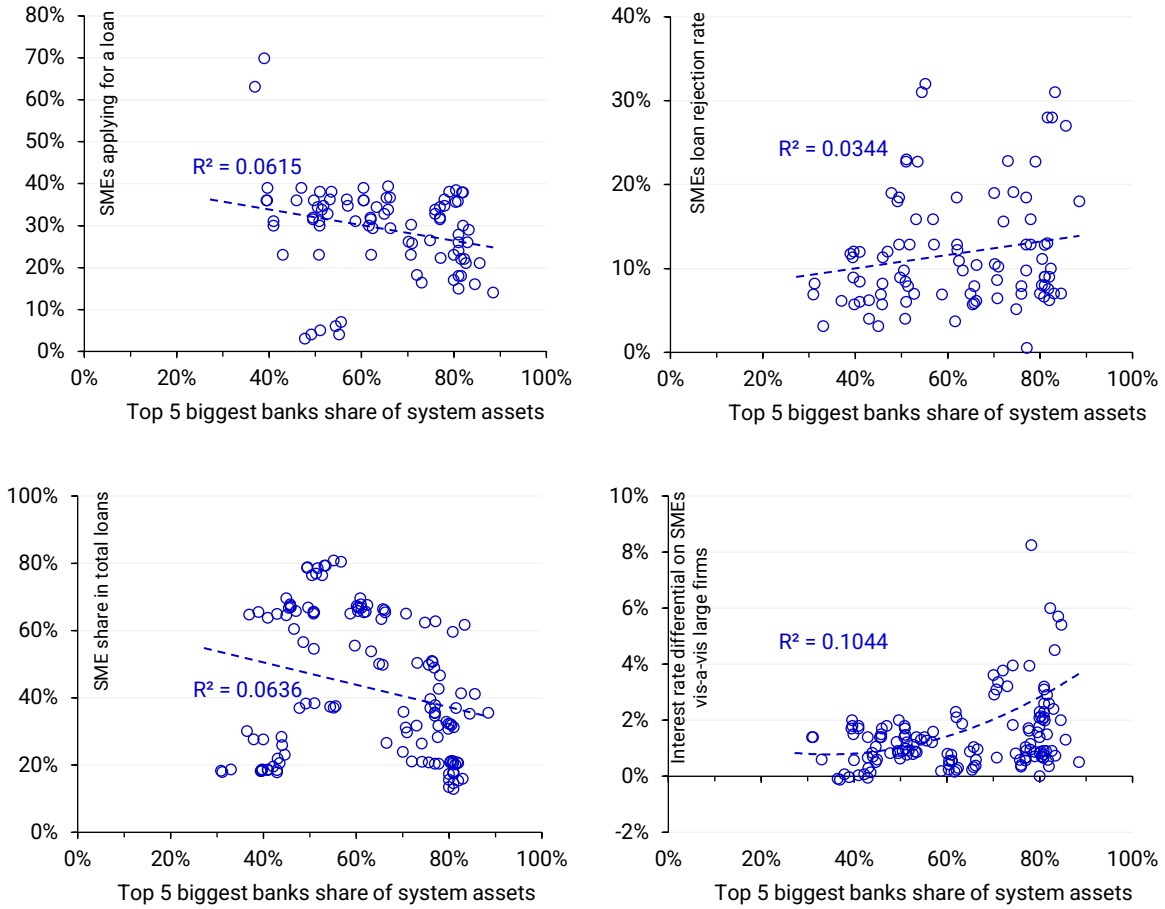


Top left: Each line represents the lending propensity of each of nine bank size groups over the period from 1994 to 2013 in the U.S. The lending propensity to micro businesses is computed as the ratio of Micro Business Loans to Total Business Loans (MBLTBL) for each size group. Source: Mkhaiber and Werner (2021).

Top right: percentage of banks that make "largely all" of their commercial and industrial (C&I) loans to small businesses. Source: FDIC (2018)

Left: geographical trade areas of small and large banks. Source: FDIC (2018)

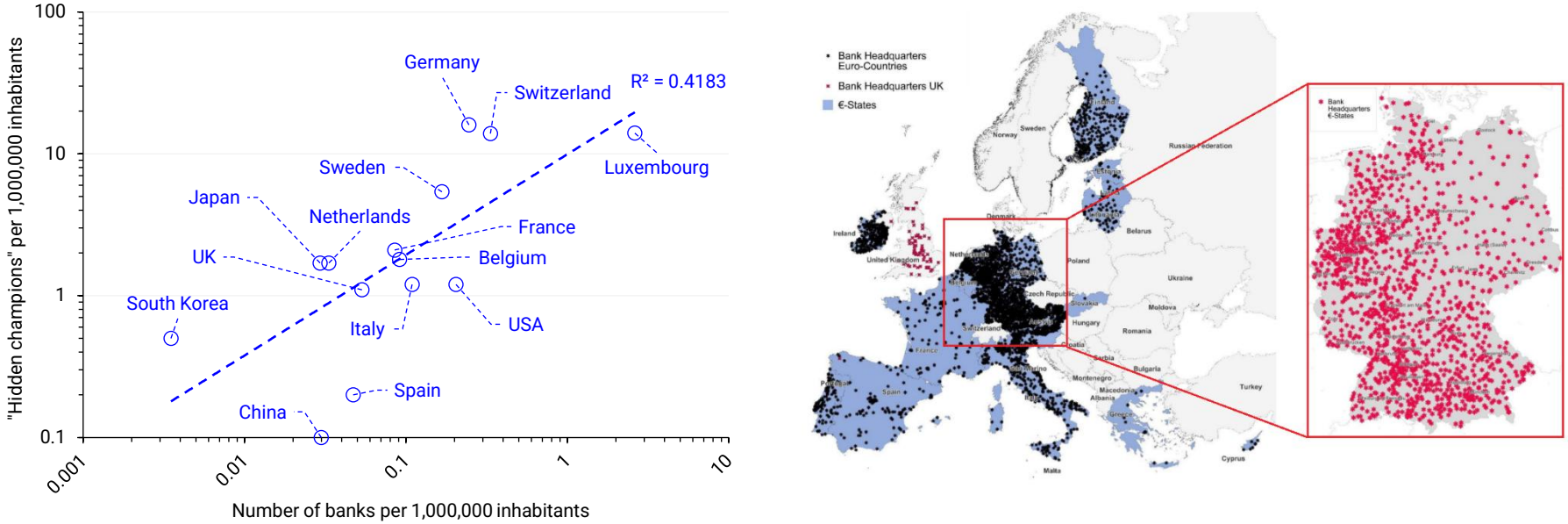
A further way to corroborate this is to check how banking system concentration (measured by e.g., the share of banking system assets held by the 5 biggest banks) correlates with various measures of SMEs' capacity to access finance and the terms on which they access it. Some are shown in the graphs below. 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.



Data are for 15 OECD countries, 2007-2016 (source: OECD.Stat, *Financing SMEs and Entrepreneurs: An OECD Scoreboard*), and 45 countries, 2006-2017 (source: World Bank (2019), *Global Financial Development Database*). Complementary sources: BIS, SME Finance Forum.

The benefits of having a large, diverse demography of banks extend beyond access to finance. As shown below, the empirical evidence suggests that having a high number of banks per capita – which effectively means having a large share of the banking sector comprised of local community banks – correlates with having a high number of highly competitive SMEs (called "Hidden Champions") which are world leaders in their respective export markets. This is shown in the top panel in the figure below.

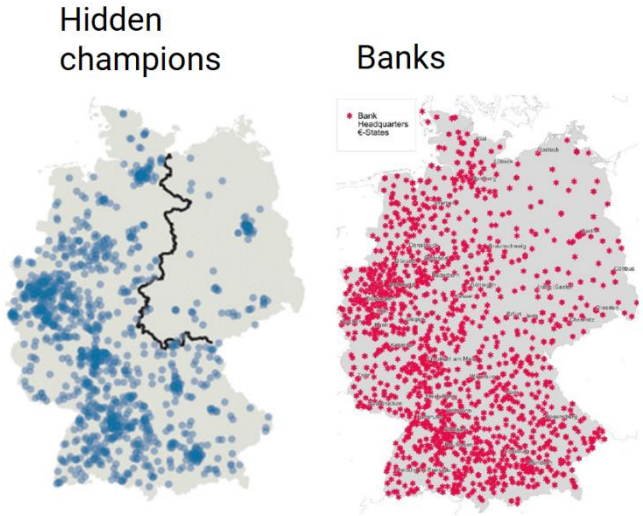
The case of Germany is illuminating. It is the country with the highest number of Hidden Champions, both in absolute terms (1,300+) and per capita (16 per 1,000,000 residents) as of 2014. German export competitiveness is widely known. Less known is the fact that Germany is home to some 1,500+ banks (the highest number in Europe). Around 70% of these banks are locally controlled, small, not-for-profit community banks.[9] These small banks lend locally and to local SMEs, which account for a large bulk of German exports.



Left: number of hidden champions (vertical axis) and number of banks (horizontal axis) per 1,000,000 inhabitants. Data are for 2014. Source: Simon, Kucher & Partners; Bank of International Settlements.

Right: bank headquarters. Gärtner and Fernandez-Montoto (2018).

[9] See https://foe.scot/wp-content/uploads/2012/05/Edinburgh-Werner-Case-for-Local-Banks-2012.pdf



Left: Geography of hidden champions (The Economist (2019)) and bank headquarters (Gartner and Fernandez-Montoto (2018)).

As shown above, small banks predominantly focus on local trade areas for small business lending. As shown in the bottom panel in the previous figure, 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, usually the entire country, although a substantial minority is, like small banks, locally focused. As the figure shows, in Germany 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 at the national level.

This is especially true in sparsely populated areas, where small banks tend to account for a higher share of deposits (Kodrzycki and Elmatad, 2011).[10] This can be appreciated in the two graphs below.

[10] 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.

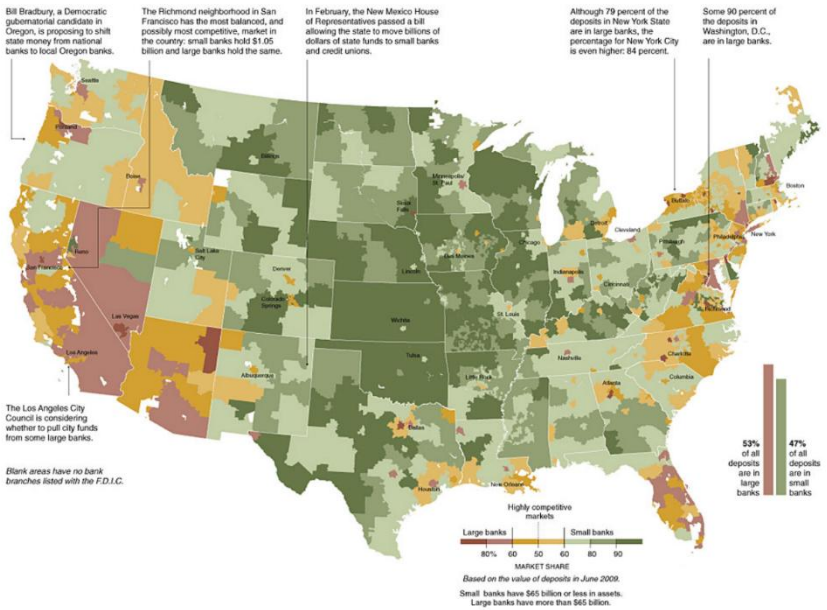
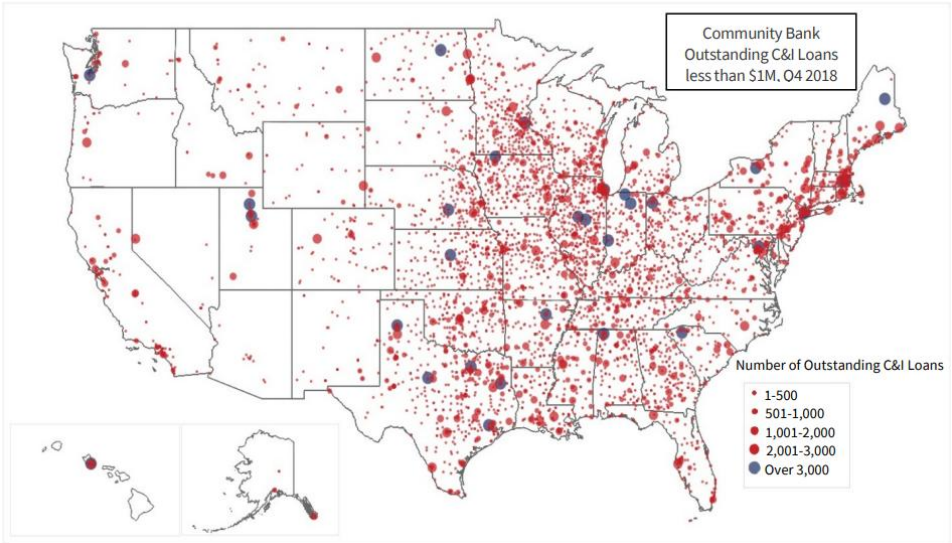


Chart 2. Where Are Community Banks Doing the Most Small Business Lending?



Left: Share of deposits held with large banks (red) and small banks (green). Source: The New York Times.

Right: outstanding commercial and industrial (C&I) loans of less than $1mn granted by community banks, as of Q4 2018. Source: Brown (2019).

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"

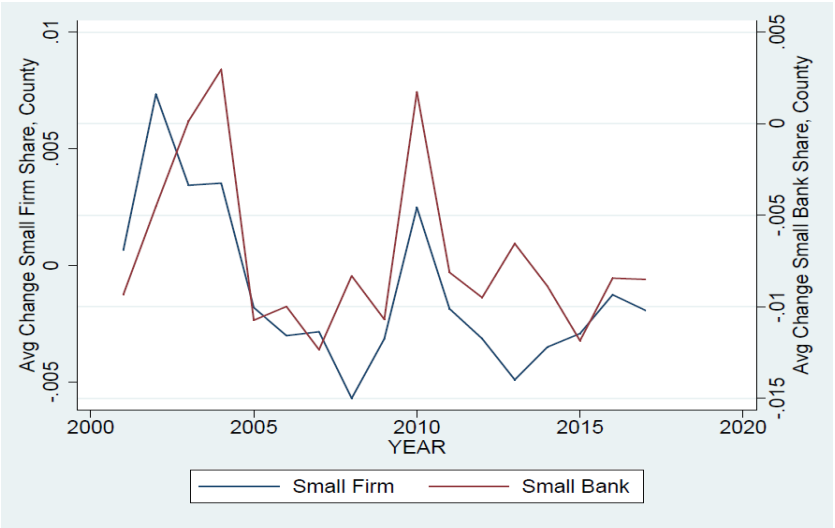
In fact, there is compelling evidence that *the destinies of small banks and small firms are tied together*. Small banks disproportionately depend on small businesses as their principal borrowers. The traditional understanding of this is that small banks rely on their relationships with these small borrowers, granting them better information that can be accessed by the larger banks. According to Brennecke, Jacewitz and Pogach (2020):

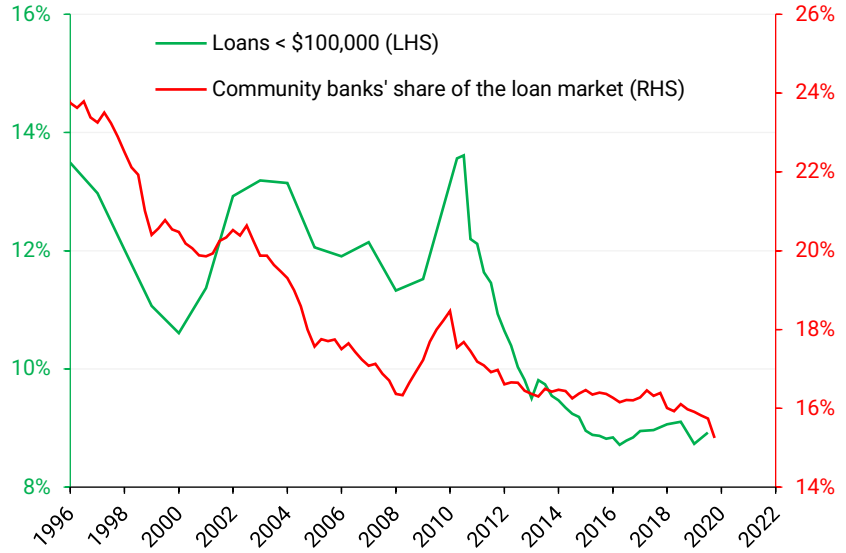
> "As firms in real industries consolidate, due to technological advancement, economies of scale, or monopolistic rents, the smaller firms that form the foundation of small banks' relationship-lending business model gradually disappear. With fewer borrowers, small banks face a lower demand for their relationship-based loan products, leading to a reduced small bank presence. Viewed alongside existing literature on how bank consolidation affects the supply of small-business credit, our results suggest that banks may act as a cross-industry transmission mechanism of industry-specific consolidation patterns"

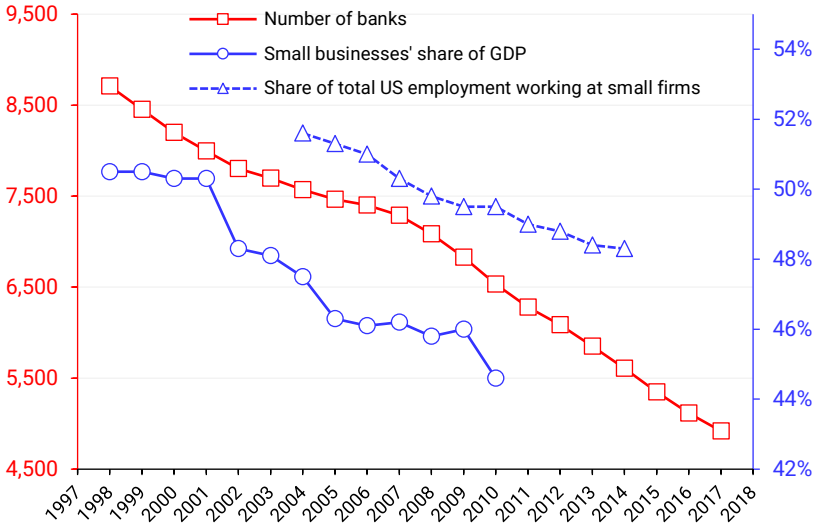
And, conversely, community bank disappearance through mergers tends to reduce lending to small businesses. According to Jagtiani and Maingi (2019)

> "We investigate the shrinking community banking sector and the impact on local small business lending (SBL) in the context of mergers and acquisitions. 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."

Evidence is presented in the two graphs below. The left panel 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, the right panel plots the share of loans of less than $100,000 of denomination in all loans (green), and the share of community banks in the loan market, again showing a clear positive correlation. The third panel also shows a clear correlation of the decline in small banks matching the decline in small firms' contribution to total employment and GDP.







Top left: Average national changes in the small firm employment shares (blue) and small bank deposit shares (red) across counties. Source: Brennecke, Jacewitz and Pogach (2020).

Top right: Market share of community banks in total bank lending in the US (red) and the share of commercial and industrial (C&I) loans of denominations below US$1MM in total C&I loans (green). Source: FDIC.

Left: Number of banks (red), small business' share of U.S. GDP (blue) and share of total U.S. employment working at small firms (discontinuous blue). Source: JP Morgan Chase; FDIC.

For a number of reasons community banks, like all banks worldwide, have shifted their loan portfolios increasingly to *real estate* loans since the 1980s. This has been encouraged and likely was triggered by bank regulation: The 'Basel' approach to bank regulation, advanced by the Basel Committee on Bank Supervision (BCBS, located inside the Bank for International Settlements, Basel, Switzerland) since the 1980s has been focusing on capital adequacy and utilizing sector-specific risk weights. These weights have favoured real estate lending by making it more profitable via a lower regulatory risk weight than productive business lending.

However, in the USA the small banks have shifted towards real estate lending to a greater extent than big banks.[11] Two important reasons for this seem to be, firstly that collateral is easier to obtain, and secondly, the real estate sector is "less associated with relationship-lending" (Brennecke, Jacewitz and Pogach, 2020).

2.3 Developments in the U.S. and Michigan community banking sector

Unfortunately, the number of banks in the U.S. is in a decades-long downward trend, as shown on the top-right in the graph below. 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 (top-left panel).

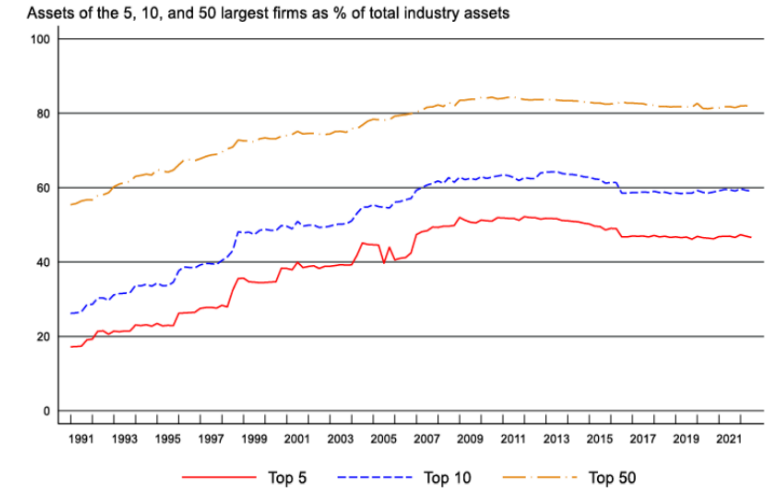
As has been shown above, banking system concentration is generally bad for small businesses. Mkhaiber and Werner (2021) found that small banks are more prone to lend to small firms. But as small banks themselves grow over time, their average loan size and hence also customer size increases. This is why it is important to constantly create new small banks that cater to the smallest of firms, and why it is important to ensure a favourable regulatory and institutional environment backing up small banks.

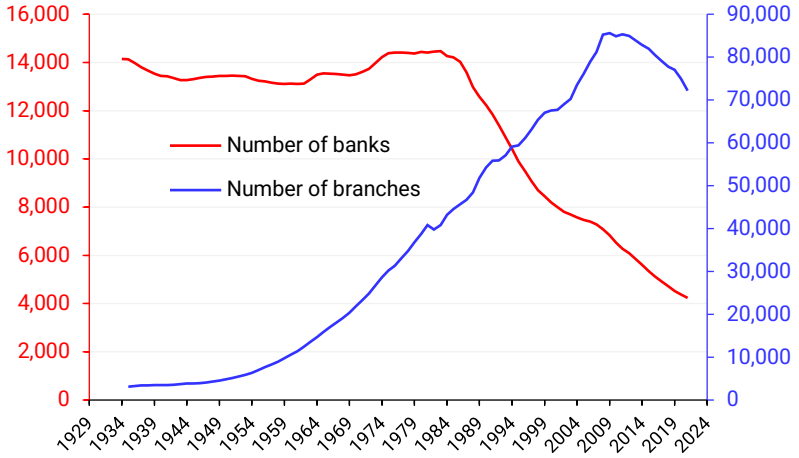
The start of the sharp drop in the number of banks in 1985 coincided with the trade deficit in the U.S. becoming a structural problem, the Plaza Accord and the beginning of an accelerated shift of manufacturing to Asia.[12]

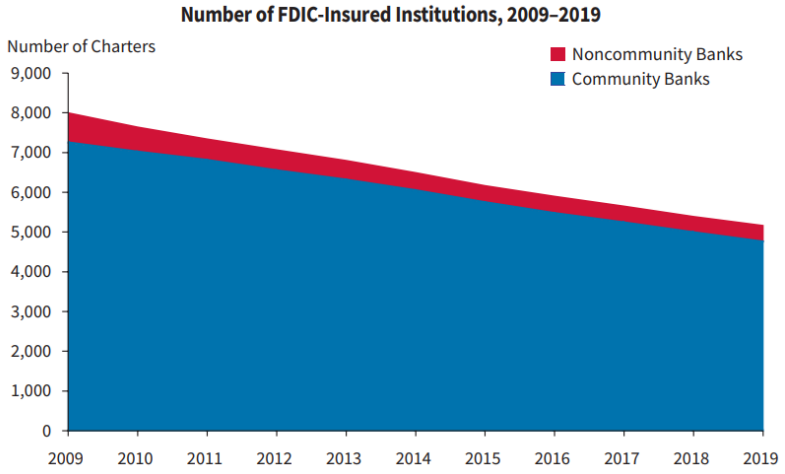
The pattern is even more dramatic in Michigan, where the number of banks has dropped relentlessly over the past nine decades, as shown in the bottom-right panel above: a shocking 82.7% drop since 1934, or -2% on average every year. Michigan is in the top 3rd of states with the largest decrease in the number of banks since 1950, behind only the likes of Pennsylvania, Illinois, New York, Ohio, Texas, Minnesota and Wisconsin. The drop in the number of banks in Michigan is almost fully accounted for by a drop in the number of *community* banks (bottom panel).

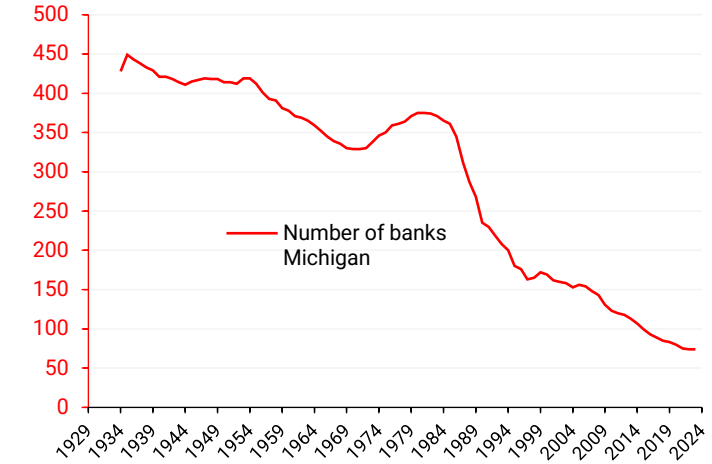
[11] Real estate loans constituted around 20% of the balance sheet of both small and large banks in 1985. However, they started to diverge, and while for large banks the share rose to a peak of 30% in 2008, for small banks the peak reached 50% that same year. See Board of Governors of the Federal Reserve, H.8 Assets and Liabilities of Commercial Banks in the United States.

[12] Net exports were -3% in 1986 when the decline in the number of banks began. See https://fred.stlouisfed.org/series/A019RE1Q156NBEA

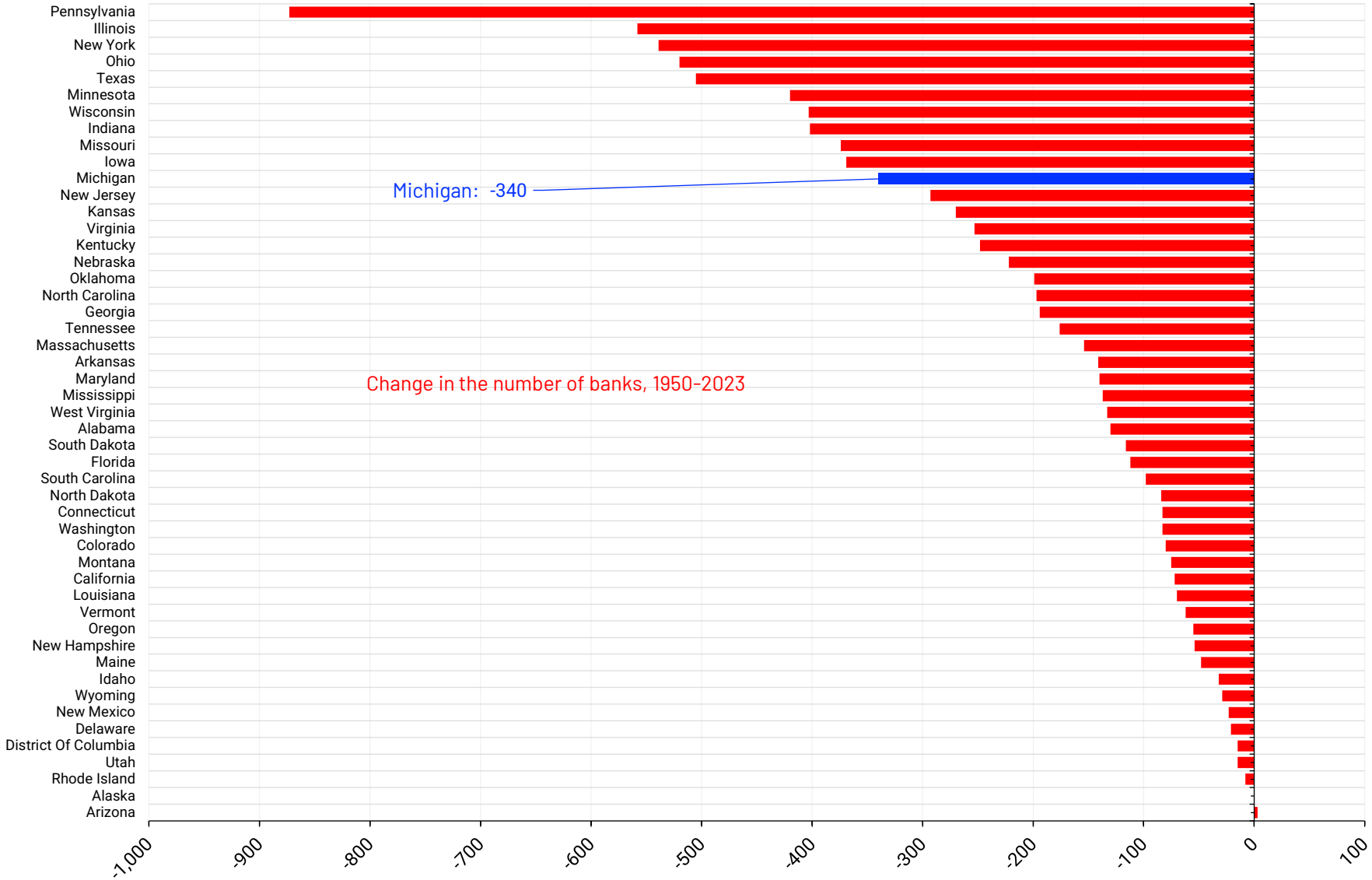








Top left: banking industry concentration, % of assets of biggest banks. Source: Federal Reserve Bank of New York, Quarterly Trends for Consolidated U.S. Banking Organizations. Top right: number of banks (red) and branches (blue) in the U.S. Source: FDIC. Bottom left: Number of banks (community and non-community) in the U.S., 2009-2019. Source: FDIC (2020).



Change in the number of banks, 1950 to 2023. Source: FDIC.

This decline in the number of state-chartered banks is due to two factors:

1) the lack of entry of *new* community banks into the market (new bank charters), and
2) the disappearance of *existing* community banks, due to mergers on the one hand, and ordered closures instructed by the FDIC on the other. Surprisingly, the latter Federal bank regulator does have a habit of closing even healthy banks (Ashcraft, 2005).

Both factors have played a role, as shown next.

2.3.1 Lack of entry

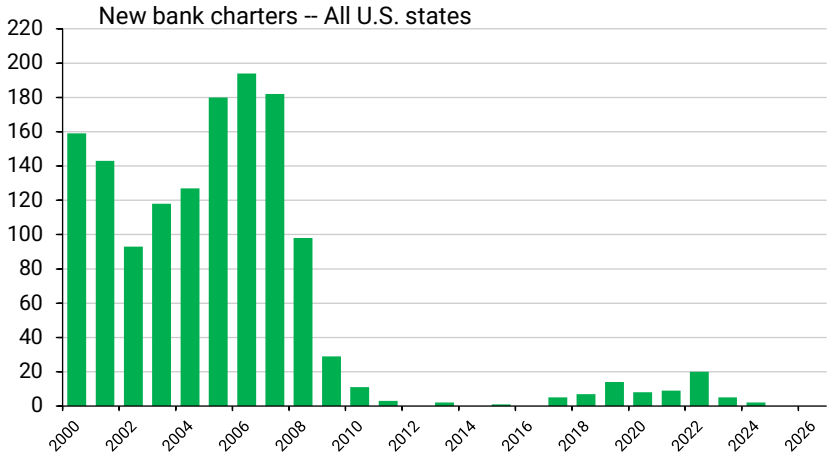
Since the financial crisis of 2008-9, the number of new bank charters has been muted, that is, very few new banks have entered the market.

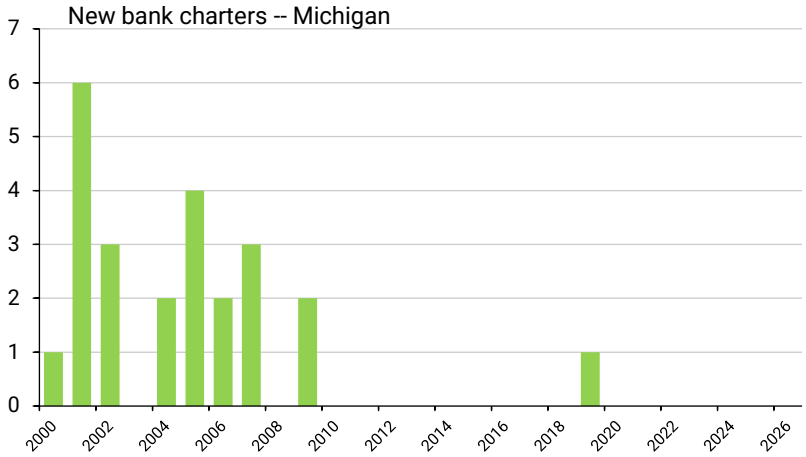
One of the reasons for the lack of entry is lower interest rates. According to Adams and Gramlich (2014),

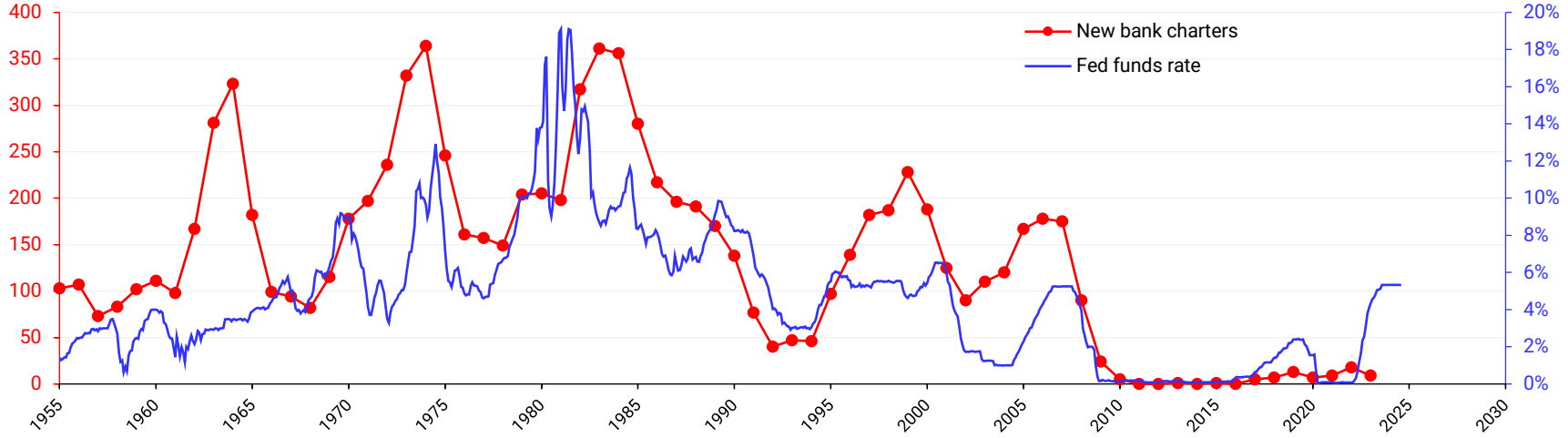
> "Interest rates are known drivers of banking profitability, and regression results suggest that these rates – plus other non-regulatory influences such as weak banking demand – are likely to have caused 75-80% (or perhaps even more) of the current decline in new charters"

The graph below shows the number of new charters and the Fed funds rate. Now that short-term interest rates have normalised to some extent, we are likely to see more bank charters.

The graph on the right hand side below shows the number of new charters in Michigan. It can be seen that in the past 15 years only one new bank was chartered in Michigan. Given the problem that even small banks grow over time and raise their average target customer size, it is necessary to establish small new banks continuously. A State Bank of Michigan would provide a supportive environment for new bank start-ups that gives both potential bank investors and regulators greater confidence in new bank charter applications, every-thing else being equal.





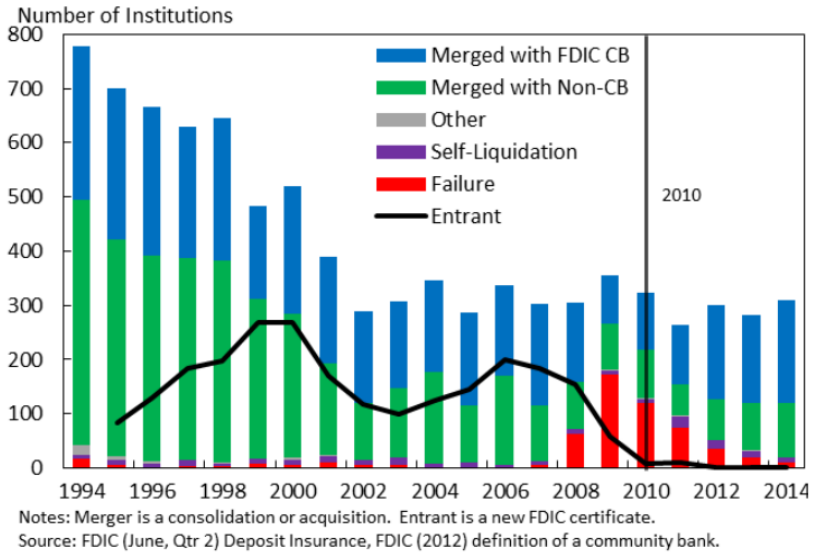


Top: New bank charters per year in the U.S. (left) and in Michigan (right). Source: FDIC.
Bottom: New bank charters per year (red) and Fed funds rate (blue). Source: FDIC, FRED.

2.3.2 Mergers

The three primary ways a bank exits the market are *mergers* (through both consolidation and acquisitions), *failures*, and *liquidation or forced closure by the regulator*. The figure below 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.

One note of caution on the data is that forced closures may also be found among those cases classified as 'failures' as the regulators may speak of a failure when in actual fact that is due to the revocation of the banking license (something that also happens on the international front, e.g. when Herstatt Bank in Germany failed in 1974, but it later emerged that this 'failure' was due to the regulators withdrawing the license under disputed circumstances).



Reasons for exit of banks with total assets < $10 billion. Council of Economic Advisers (2016).

Consequently, 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 for this is that put forth by Brennecke, Jacewitz and Pogach (2020), according to whom 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, Jacewitz and Pogach, 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 of the number of banks be attributed to the decreasing number of *community* banks.

At the same time it is a natural process for small banks to want to grow (including via merger, if that seems promising), since banks will in any case always lend to the largest possible set of borrowers. The reason for this is the same reason why large banks tend to have a higher propensity to lend to large firms (Mkhaiber and Werner, 2021): It is more profitable for banks to advance the largest possible amount of loans (while still staying in line with bank regulations and risk management principles concerning concentration risk).

Mkhaiber and Werner (2021) reported that as even the smallest banks grow naturally over a twenty-year observation time period, they begin to lend to larger firms and stop lending to the smallest firms.

The only solution to address this problem is to constantly create new small banks close to the minimum possible size, as permitted by regulatory capital. However, Federal bank regulators are not especially favourably inclined towards the smallest of banks, as they usually encourage other small banks to merge with them. A State-level sovereign bank could change this dynamics and foster a supportive environment for all banks in the state, including the smallest, and it could encourage the creation of new very small community banks that cater for the smallest firms.

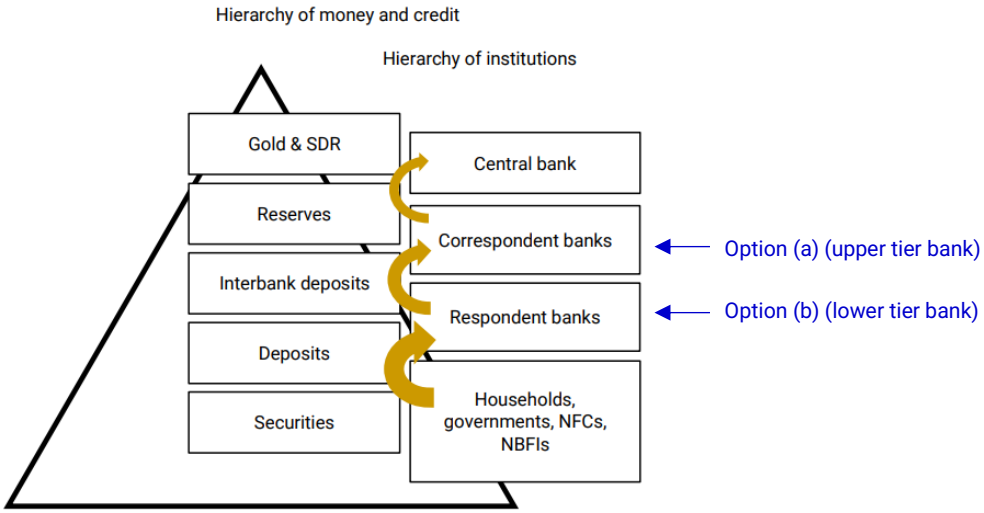
3. What is a Sovereign State Bank with a bullion depository?

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:

a) 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

b) lower-tier banks, which compete with smaller banks and have households and non-bank firms as their customers. [13]

This is shown below.



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 below. 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.

[13] 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.

While there is ample literature discussing the merits and relative performance of government-owned versus private-owned banks,[14] most of this literature fails to distinguish between upper-tier and lower-tier banks, especially within a suitably detailed hierarchy of the monetary system (such as shown in the graphic above), since banks have very different characteristics and their effects on an economy differ, based upon their precise position in this hierarchy.

In this report, we are proposing the establishment of an *upper*-tier bank (Option (a)), which is majority-owned by the Michigan State Government (MSG). The model has as its role model the Bank of North Dakota (BND), described later.

[14] See, e.g., Borsuk et al. (2022) and Panizza (2022).

4. Benefits for Michigan

4.1 Benefits for local banks, savings banks and credit unions

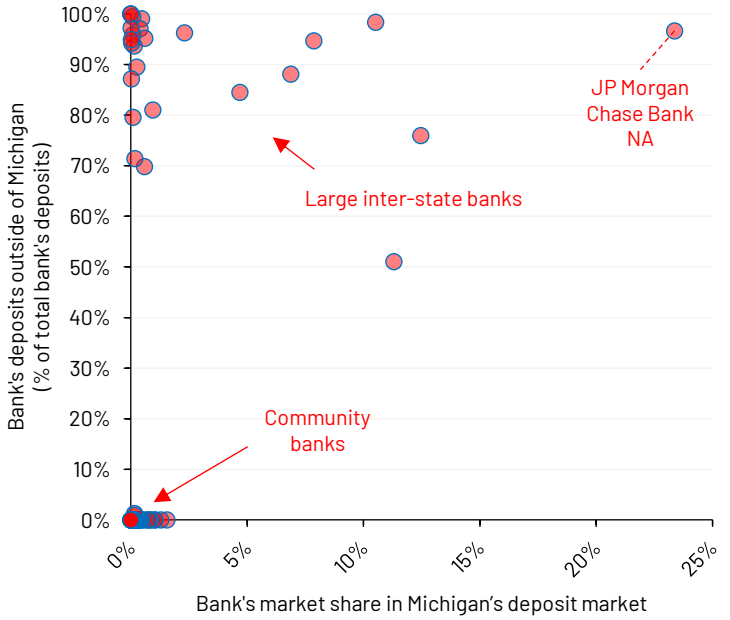
In Michigan, 10 banks account for 82.2% of the deposit market (above the U.S. average of 60%). On average, these banks have total deposits of $504 billion, and on average 68.6% of their deposits are booked in other U.S. states. Michigan's remaining 93 banks have average deposits of $18.4 billion, and on average 15.0% of their deposits are booked outside of Michigan.

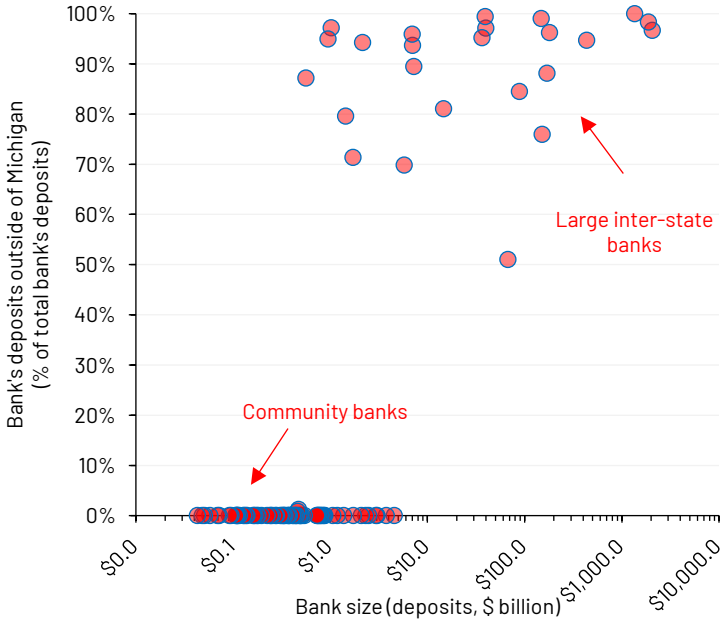
Overall, two clusters can be detected: those for which Michigan represents most of their deposits booked (upper left corner) and those for which it represents a very small share (bottom left corner). The first cluster tends to be large, inter-state banks. The second cluster tends to be community banks (defined as those banks with <$1 billion in assets and the majority of their deposits booked in Michigan). Currently there are 70 community banks in Michigan.

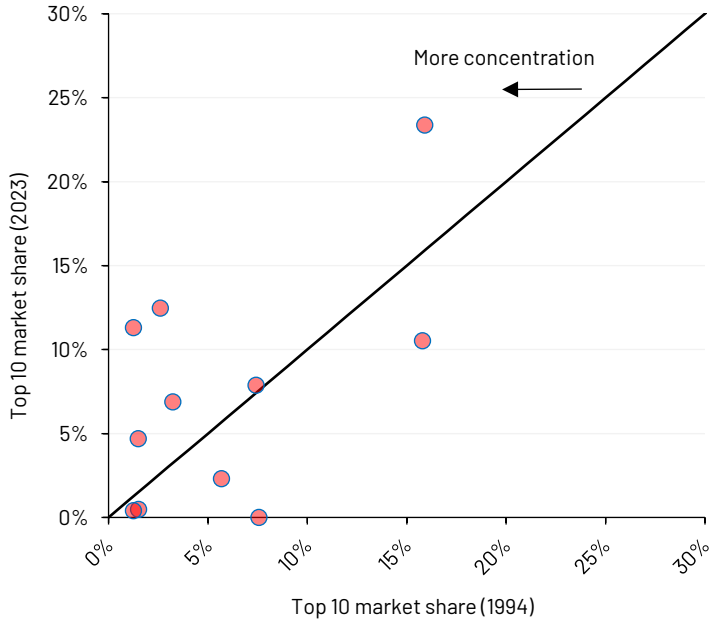
The introduction of SBM would help community banks in Michigan compete against larger banks, by helping them fund larger-scale projects through loan participations with SBM and loan purchases by SBM. In the case of loan participations, SBM would be involved in larger lending projects as the 'lead bank', and the community banks would be part of the remainder syndicate of lenders participating, who would be allocated a share of the credit.

In the case of loan purchases, community banks would act as loan originators, using their local, "soft" information about borrowers to evaluate their credit worthiness, probability of default, etc. (for which they have an advantage over large banks, including SBM), and SBM would agree to purchase some of those loans from community banks ex post facto.

Overall, SBM 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 1.07% of TSG annual revenues. Put differently, **a $100 million initial investment in the form of share capital injected into SBM to establish this institution** (a one-off investment without further investments required) would **translate into a balance sheet of $10 billion in assets, around $6.7 billion (at least) of which would contribute to additional funding to Michigan's businesses.** Importantly, this funding would be used for productive purposes, leading to higher gross fixed capital formation and thus higher GDP (see Section 4), which in turn results in increases in tax revenues for Michigan, rendering the initial investment highly profitable from a number of perspectives.







Data are for Michigan, June 30, 2023. Source: FDIC Deposit market share reports.

4.2 Benefits for Michigan's local economy

The existence of the State Bank of Michigan would result in an increase in total bank loan funding via direct lending from the state bank itself, and also via its support of the state-chartered banking industry, whose increased activity will also boost bank credit from the many local community banks to small business.

The SBM lending includes long run lending to large-scale projects via loan participations. We estimate that in the initial five years, the impact on increasing local bank funding to small firms would amount to approximately $7bn in new lending from the local banks, as it is proposed to kick-start the operations of the State Bank of Michigan by an initial one-off purchase of 20% of the loan book of all local banks, extracted proportionately by size (namely selecting the largest 20% of loans). The cost to the State of Michigan would amount to ca. 1.07% of TSG annual revenues, namely $500 million. This one-off investment would be recouped within approximately four years from returns on equity, after which the State of Michigan would henceforth receive significant annual dividends as profit from its investment.

The initial investment of $500 million in share capital injected into SBT 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 Michigan'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 investment purposes (as opposed to asset-backed credit or consumption credit), leading to higher gross fixed capital formation and thus higher GDP (see Section 4), 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 Michigan, depending on specific operating policies adopted.

In addition to the benefits due to increased job creation from the small firm sector – the biggest job creator in the USA – the benefits from increased GDP growth are also manifold: By boosting state-level transactions, corporate revenues, value added, gross state level product and income, tax revenues would also increase. This would contribute to fiscal stability and lower funding costs for potential state-level borrowing (which itself will be needed to a decreasing extent).

Further, the State will receive regular dividends from the profitable operation of the Sovereign Bank of Michigan. But the benefits are more far-reaching still, as the financial power of a state bank can support new initiatives in a number of sectors of the Michigan economy, including new investment in R&D and education (which are among the most productive forms of investment).

4.3 Summary of key benefits to the state and local government

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

- **Dividends:** With Return on Equity (RoE) of ca. 18%, the State Bank of Michigan will, 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.
- **Higher state-level tax revenues:** Tax revenues are proportional to value added activities and nominal GDP. The positive effect on Michigan GDP will thus also raise state-level tax revenues.
- **Greater job creation and higher labor participation:** While Michigan does not have immediate structural problems with job creation and unemployment, the launch of the State Bank of Michigan will ensure that job creation will remain 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 work force are hired by small firms. Furthermore, a thriving community bank sector, backed by a state bank, allows stakeholders to tackle such structural issues as job creation and city re-development and revival of cities such as Detroit and other locations that have suffered from the shift of jobs from the US to Asia in the past half century.
- **Greater local autonomy and resilience to shocks from outside of Michigan:** The state bank effectively acts as a buffer against shocks from outside Michigan to the financial sector in Michigan and thus down to the main employer in the state, the many small firms. It is well-documented how 'contagion' can affect large financial centers such as New York, Chicago and Los Angeles, and then spread to regional financial institutions. However, by positioning the State Bank of Michigan as a reliable and dedicated local correspondent bank for all locally headquartered banks in Michigan, they are being shielded to a significant extent from the potential adverse effects of outside shocks. Such shocks 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. The State Bank of Michigan renders the State of Michigan able to act quickly to potential future adverse policy decisions taken outside of Michigan, for instance via the use of its bullion depository function or by acting as a counterparty to Michigan community banks even in the case of devastating cyberattacks on the wider US banking system. On the local level, non-digital analog systems can also be introduced quickly as temporary measures in such adverse cases, but their likelihood of being viable is significantly enhanced if they are backed by a larger counterparty, which role the State Bank of Michigan would play.
- Importantly, it is advised that the State Bank of Michigan, like the Bank of North Dakota, does **not join the Federal Deposit Insurance scheme**. Instead, deposits should be guaranteed by the State of Michigan (as is the case in North Dakota). This

will limit the control and influence that Federal agencies can exert over the State Bank of Michigan (the Federal Deposit Insurance Corporation, for instance, has the power to shut down even healthy banks, and uses this).

- **A greater variety of options concerning funding the public sector borrowing requirements for the state and for local governments:** The State Bank of Michigan can 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, and also Dagostino, 2025).
- **Direct support of existing state-level policy programs:** The State Bank of Michigan can support all State of Michigan 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.

4.4 State pension funds

The existence of the State Bank of Michigan and its function as a hub bank for all Michigan local and community banks also allows the state pension funds to increase their options for investing in the Michigan economy, namely by investing in bonds issued by the State Bank of Michigan. Further, the state pension funds could join directly some of the larger loan syndications arranged by SBM with local banks.

Equally important, the State Bank of Michigan can act as the custodian of state pension funds, thereby ensuring that a greater proportion of the investments end up back in the State of Michigan, where they benefit all Michigan stakeholders more directly than investments outside of Michigan. There are further benefits from such a role as local custodian:

The safety of large custodians and clearing houses as safekeepers of dematerialized ownership claims has recently been called into question by experienced practitioners questioning whether in a crisis custodial assets will actually be safe. Already at the G20 meeting at Seoul in 2010 it had been decided that regulators could "bail in" depositors in future banking crises, which was indeed used in such cases as the Cypriot and Greek banking crises of 2011 and 2012.[15] In 2010, the US established a resolution framework for systemic financial institutions under the Dodd-Frank Act, providing further powers to federal agencies to transfer or wind down a bank with losses and costs allocated to shareholders and creditors to the necessary degree. Here, "creditors" refers to depositors: While regulators have allowed

[15] In Seoul (November 2010), the G20 endorsed the Financial Stability Board (FSB) Report on "Reducing the moral hazard posed by systemically important financial institutions"4 which recommended that "all jurisdictions should undertake the necessary legal reforms to ensure that they have in place a resolution regime which would make feasible the resolution of any financial institution without taxpayer exposure to loss from solvency support while protecting vital economic functions through mechanisms which make it possible for shareholders and unsecured and uninsured creditors to absorb losses in their order of seniority". See https://ec.europa.eu/commission/presscorner/detail/it/memo_14_297

banks to market "deposits" as investment offerings, at law there is no such thing: bank deposits are merely loans by the public to the banks. "Depositors" are thus at law merely general creditors.

However, the situation may be even more precarious than depositors losing their money, as even the status of securities owned by investors and held in dematerialized form via a financial institution. Changes in the status of collateral in the case of failure of large institutions, exchanges and settlement systems or agents, may encumber not just deposits, but any securities held in custody by third parties, upon the failure or collateral calls by these other parties.[16] It is conceivable that contagion from collateral calls will result in a chain of bank failures and also losses to holders of securities on a large scale. A State Bank of Michigan would act as a de facto circuit-breaker in such an event originating outside of the state of Michigan. Losses to Michigan citizens and also to its firms, financial institutions, private pension funds, state pension funds, insurance companies and the government itself could be minimized by appropriate preparatory action taken by the State Bank of Michigan.

Overall, the existence of the State Bank of Michigan is likely to see a greater awareness of and actual investment in the opportunities available for investors in Michigan, which benefits all stakeholders and helps to insulate Michigan from outside shocks.

4.5 Citizens

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

The bullion depository function of the State Bank of Michigan 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 Michigan. An alternative would be to organize the State Bank of Michigan bullion depository function to include direct retail deposits. A combination of both is also possible.

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

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

In the future, if the State leadership so decides, it is also possible to make shares in the State Bank of Michigan available to residents of Michigan, for instance, when a capital raise is

[16] David Webb (2023), accessed here: Queue | The Great Taking [1 ed.] 2020220202, 1022688407 - DOKUMEN.PUB

planned by SBT. This could be a different share class. There could be rules restricting such shareholdings only to natural persons, and/or legal persons domiciled in Michigan, for instance. However, it should be the aim for the State to always hold at least 50% of the shares.

4.6 Municipal infrastructure investment finance

The State of Michigan and its local administrative units, cities and counties need to undertake sizable infrastructure investment in the coming years and decades. For instance, the Michigan Department of Environment, Great Lakes, & Energy has investment plans to ensure a stable and healthy drinking water supply. For infrastructure investment, funds from state or federal sources often require matching.

A common funding source is the issuance of bonds. Among bonds, there are different types that differ in their attractiveness to banks and other investors. For instance, one usually distinguishes between bank-qualified bonds, which are municipal bonds designed for purchase by banks and allow banks to deduct some nominal interest costs (which may not be real) from their tax obligations, and private placement bonds, which are non-bank qualified. A private offering is less onerous in terms of regulatory requirements and thus tends to incur lower legal costs. While private-placement bonds are not publicly traded, as bonds in principle it is possible for investors to sell them. Liquidity may be low and market depth absent, but if an investor finds another buyer, the bonds can be sold.

Thus both types of bonds carry the risk to the issuer that a sales transaction will trigger a downgrading of the credit standing, for instance if a bond investor sells the bond at discounted prices – even if that was due to their own circumstances of, for instance, needing to complete a sale quickly.

Therefore, decision-makers would be well advised to consider an alternative source of funding, namely via **non-tradable loan contracts from local banks**, and, when available, also from the SBM.

There are a number of benefits from this that are not well known. Firstly, bonds are tradable and as such can become a target for speculators that short the bonds, seeking to profit by betting against the municipalities and causing spikes in interest rates as well as credit rating downgrades, and possibly even a "sub-sovereign debt crisis", as happened in Europe in 2011 with the sovereign debt crisis (Werner, 2016).

Secondly, borrowing from banks results in new money creation, an expanded volume of net transactions, greater nominal GDP growth, expanded corporate turnover, profits and employment, as well as higher tax revenues, which all helps to improve existing deficit/GDP & debt/GDP ratios (Werner, 2016). Compared to bond or capital market funding, such bank funding has a greater fiscal multiplier effect thanks to the mechanics of bank credit creation. While banks also create credit when they purchase assets, such as municipal bonds, by

being tradable the issuer is not in control of the length of time the bonds stay on the bank's balance sheet. A sale to a non-bank would shrink the money supply, and municipalities cannot control this, nor the timing. If instead the municipality is funded via a loan contract from a local bank, the maturity can be fixed, and there is no risk of a speculative attack or rating downgrade.

Thirdly, such a funding strategy helps build more diversified loan portfolio of local and regional banks, which in turn enhances their ability to support small businesses (boosting job growth and economic activity).

Fourthly, bank finance is always tailor-made and hence can be better shaped in terms of maturity, fixed vs. floating interest rates, repayment schedules, callability and other features of the funding than the more standardized bond issuance schedules. While the interest rate cost may be slightly higher, the underwriting costs are far lower – usually non-existent.

Can municipalities borrow from banks?

Once a municipality has established the right to fund itself externally through debt, often via issuing bonds, it can also be arranged for this to be funded by a bank. Any debt that can be structured as a bond can also be structured to be financed by a bank willing to finance it. And any loan can be structured to qualify as a bond, via variations in its covenant.

Municipalities often are more accustomed to borrowing money by issuing bonds. In Michigan, municipalities are authorized by a number of statutes to issue bonds after a notice and referendum process. Municipal bonds include Voted unlimited Tax General Obligation Bonds, Limited Tax General Obligation Bonds, Revenue System Bonds, Special Assessment Bonds, Contract Bonds and Cash Flow Notes.

As indicated, these bonds are often covered by the municipality's ability to levy local taxes and hence investors often find such bonds attractive. At the same time they carry a low risk and hence municipalities often have a high credit rating. Consequently bank regulators often encourage bank investment in such bonds, by granting lower risk-weights in the bank's internal capital adequacy assessment.

However, such bonds are usually tradable, which carries the above stated disadvantages. Moreover, municipalities have after issuance no further control over who holds the bonds, as investors can sell them on.

There is, however, a solution that municipalities can adopt, which will in reality allow them to borrow money from banks via non-tradeable loan contracts: The economics of a loan and a bond is the same, with the main difference being the tradability and technical features of this debt instrument. Moreover, it is less well known that the legal status is also the same: both a loan and a bond are debt securities. English law classifies both as promissory notes, which themselves are a sub-category of bills of exchange (Bill of Exchange Act 1882). In the US, this was introduced along these lines via the Negotiable Instruments Law (NIL), adopted in Michigan in 1905, and heavily influenced by the English Bills of Exchange Act. This was

replaced by the Uniform Commercial Code (UCC) and its Article 3, which defines and regulates negotiable instruments, including bills of exchange, called “draft”. Michigan adopted the UCC in 1964.

According to UCC Article 3, bank loan contracts can also be treated as promissory notes. And so can bonds. They merely need to meet the following criteria: They both need to be unconditional promises to pay, a fixed amount of money (or credit), payable to order (or bearer – although that would not be chosen in this case), payable on demand or at a definite time and only has limited undertakings connected to it (such as concerning collateral).

Bonds are also negotiable instruments under UCC Article 3, if they meet the same criteria, which is usually the case and one can easily ensure. Bonds usually have covenants that can be tailored by the issuer. It is thus possible to structure a “bond” such that it is non-tradable in its covenant and has all the features of a loan, yet is classified as a bond. Under UCC Article 3, a negotiable instrument must be payable to order or bearer and must be freely transferable *unless* restricted by its own terms. But under UCC Article 3-104(b), an instrument can expressly prohibit transfer or assignment. While it then ceases to be a negotiable instrument under the UCC, it is still valid and enforceable, and will be treated as a contract under ordinary common law. Therefore, if the bond includes a convent or term that says “This instrument may not be sold, assigned, or transferred except with the prior written consent of the issuer, and then it is sold to banks only, it has all the features of a bank loan. A clause that it has to be held until maturity would re-enforce this non/negotiable status. There would thus be no secondary market in which these bonds would be traded. General UCC contract principles (Article 1) would apply.

This is in fact often the case with so-called private placement bonds, which are issued by large corporate borrowers that, for regulatory reasons, can only “issue bonds”, but wish to obtain a loan. Their legal documentation is essentially a loan agreement disguised as a bond. Sometimes these are called “loan notes” or “private bonds”. They are typical of private placements or Regulation D offerings.

The three key clauses to destroy negotiability and ensure that “bonds” sold to banks would have the same effect as bank loans are as follows:

- "This bond may not be transferred without the prior written consent of the Issuer."
- "The rights under this bond are personal to the holder and may not be assigned."
- "This bond is intended to be held to maturity and is non-transferable."

One would only need to ensure that these “bonds” also meet the IRS rules to qualify as debt instruments, which can be arranged.

In other words, it is absolutely possible in the US to structure a “bond” so that it is economically and legally identical to a bank loan, even though it is called a bond, provided one carefully designs the covenants. If desired, the non-negotiable nature of such “bonds” can be further locked down by making use of trust law concepts. This would ensure that the bond

likely reverts to the issuer even in case of bankruptcy of the lender. As can be seen, municipalities can continue the practice of bond issuance, but may enjoy all the economic and reputational benefits of a non-tradable bank loan.

5. Risk management

5.1 State requirement to take cash

Like several other US states, the State of Michigan in 2023 passed a Senate Bill (no. 283) which amends the Michigan Consumer Protection Act (1976 PA 331) by amending section 3 (MCL 445.903) to make it illegal for retail businesses to refuse cash for in-person transactions. This ensures that cash cannot be phased out for personal retail transactions. This guarantees certain freedoms and human rights, such as the right to privacy concerning economic transactions.

However, the legislation is not bullet-proof. The Senate Bill amending existing legislation is worded to ensure that 'legal tender' cannot be refused. This leaves the possibility that in the future central bank digital currencies may be classified by federal law as legal tender, in which case cash can still be eliminated.

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

The existence of a State Bank of Michigan 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' which will accept cash, hence ensuring that cash cannot be entirely eliminated. Moreover, it offers a practical mechanism for ensuring a cash and/or bullion economy and means of payment develops, assuring liquidity, credibility, and certainty.

5.2 Preparation for the possibility of CBDCs

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

Moreover, establishing the State Bank of Michigan offers an important measure to prepare State for the different scenarios that are possible as the Federal Reserve system explores the introduction of a USD central bank digital currency (CBDC).

Central bank digital currencies are named in a slightly misleading fashion. 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 "C" of CBDC – namely the centralization aspect. This is combined with the programmability and unprecedented technology for total surveillance and micro-management 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 decides 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 into the central bank balance sheet to CBDC accounts. Conservative estimates by proponents of CBDCs are that their introduction could lead to outflows of deposits from banks equivalent in size to 5% to 10% of bank assets (García et al., 2020) and 20% of household and non-financial deposits (Bank of England, 2021).

Necessary preparations for the potential introduction of CBDCs are the availability of sales transactions settled in cash – for which the State Bank of Michigan 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 Michigan would provide a crucial supporting or even central role in any such schemes.

Finally, should CBDCs be introduced, then states without a state bank may find that their state-domiciled banks will disappear quickly, leaving the entire state economy beholden to the programmable micromanagement of the Federal Reserve. On the other hand, federal states with a state bank, such as North Dakota, are likely to be able to preserve their local banks, 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 that also opens, if necessary, opportunities for alternative currency and payments arrangements.

5.3 Enhancement of financial transaction freedom and privacy

Banks have access to a large amount of historical and ongoing current information about depositors and their digital transactions. It is the type of data that Google and other aggregators of our online behaviour harvest and sell on. Banks, to their credit, have never done this, as it has been part of the implicit or explicit contract between the bank customers and the banks that the transaction behaviour and account information is to be treated confidentially.

This wealth of information can be accessed by a CBDC system. Moreover, CBDCs are programmable and thus can be used to direct individual behavior by central planners.

The intention of the central planners has been visible in the Payment Services Directives (PSD) produced by the unelected European Commission and turned into law in many EU countries and the UK: Based on PSD2, a user of a "fintech" phone app may have clicked to consent with the terms and conditions to use the app, while not reading the small print stating that now the app provider has the right to approach the bank of the customer and the bank, according to PSD2, is then forced to divulge all customer data, especially concerning spending patterns and transactions.

The State Bank of Michigan 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 Michigan offers a shield against potential financial intrusion from outside the State of Michigan and can protect individual freedom and privacy.

5.4 Comments on related digital 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 Michigan will 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 Michigan. This ensures that the State of Michigan can significantly enhance its resilience to any cyberattack affecting the large nationwide or federal banking networks. The State Bank of Michigan 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.

6. The History of State Banks

6.1 Bank of North Dakota (BND)

The Bank of North Dakota (BND) is unique as it is the only remaining state-owned bank in the continental U.S. The founding of the Bank of North Dakota is another milestone in the rich history of important institutions of finance and capitalism established in North America.

It was founded by a relatively new political movement that aimed at creating such a bank and which represented especially farmers and small business owners in North Dakota (the Nonpartisan League, NPL). The bank was established to specifically address economic challenges faced by these groups, particularly their struggles with out-of-state financial institutions and high-interest rates from private banks. These are indeed the kind of issues that today make the establishment of a State Bank of Michigan attractive.

Farmers and small businesses in North Dakota were often at the mercy of large, out-of-state banks that charged high interest rates and provided little support for local economic development. Many farmers were struggling with expensive loans and foreclosure risks, so the state bank was created to offer lower interest rates and stabilize agricultural financing by reducing the risk of predatory lending behaviour (whereby the lender grants the collateralised loan with the intention of calling the loan deliberately at an inconvenient moment in order to bankrupt the borrower and cease the collateral, a practice that was to become widespread for instance in the 1930s).

The bank was also designed to keep financial resources within the state, funding public projects, infrastructure, and local businesses rather than sending money to Wall Street or Chicago-based banks. The BND aimed to provide a stable, state-backed financial institution that would prevent capital flight from North Dakota and ensure that state revenues were reinvested in local growth.

The Nonpartisan League identified economic exploitation by large corporate interests, often emanating from outside the state, as an important issue that was preventable through the creation of the right institutions, specifically a state-owned bank that would support the state-chartered banks.

There is a connection to Germany and its history of small local banks supporting farmers and small businesses: In 1919, the ethnic origin of the people of North Dakota was predominantly German Americans. According to historical census data, North Dakota had one of the highest concentrations of German ancestry in the United States, at up to 40%, alongside significant Scandinavian and other European immigrant groups. Many were farmers.[17]

Farmers required loans for seeds, land, and equipment. The local and community banks in North Dakota were largely created by early settlers, particularly German and Scandinavian immigrants, to serve the financial needs of farmers, ranchers, and small businesses. Many of these banks were established by local business leaders, farming cooperatives, and community organizations in the late 19th and early 20th centuries. Many local banks and credit unions were cooperatively owned, which means they were stakeholder banks either run by and for local farmers or aimed at the community benefit, not in order to maximise profits for external shareholders. These local banks provided fairer terms to the local stakeholders.

Although it has played various roles since its founding in 1919, BND's most important role has been serving as a lending partner for North Dakota's numerous small banks. Today 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).[18] It has only one office location and does little retail banking, so 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).

BND 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 large-scale loans (Kodrzycki and Elmatad, 2011).

For example, BND may act as lead financial institution to initiate financing of large-scale projects (e.g., loans in the $10-75mn range), and guarantee 30-50% 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.[19]

[17] German-speaking settlers in North Dakota were farmers, shaping the state's agricultural economy. German language and culture remained strong in North Dakota well into the 20th century, with German-language newspapers, churches, and schools. Many of the German Americans had arrived recently, during the course of the 19th century from Russia (Russian Germans; as opposed to the earlier settlement waves to Wisconsin and Pennsylvania in the 18th and early 19th century). Other ethnic groups included Native American tribes such as the Lakota, Dakota, and Ojibwe who had lived in the region long before European settlement and continued to have a presence.

[18] 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).

[19] See https://www.ndoil.org/wp-content/uploads/2021/09/Thursday-Todd-Steinwand-Petroleum-Council-September-2021.pdf

Bank of North Dakota (BND) 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. 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. Dividends stay within net income to ensure capital levels are not depleted (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.[20] 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 NDCC (BND, 2021).

The following table 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%

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 may 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).

[20] The number of loans distributed by BND in 2021 was 557 loans (BND, 2021).

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).[21]

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,[22] well ahead of the U.S. average for 2021, which was 1.27.[23]

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 also tend to turn to BND for funding during crises (Kodrzycki and Elmatad, 2011).[24]

According to *S&P Global*, 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 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." (S&P Global, 2021).

[21] 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).

[22] Number of banks per 100,000 people, 2014. Source: ILSR.

[23] 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 https://www.statista.com/statistics/184536/number-of-fdic-insured-us-commercial-bank-institutions/), and https://www.census.gov/popclock/).

[24] 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).

While the existence of the Bank of North Dakota has provided significant support for the state-chartered banks, their number has also declined in the recent three decades. However, the decline has been less precipitous than in many other states (see the graph on the decline of the number of banks across the USA on page 20).

6.2 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 delivered the material used to strike silver coins with a high precious metal content. The coins thus came to be called 'Joachimstaler', after the town, which came to be shortened to 'Taler'. Such Taler circulated also in Spanish Mexico. 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 12 March 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 General Loan Office was akin to a state-owned bank, offering banking services in an environment not blessed by ready credit for farmers and small businesses.

The scheme was highly successful. So much so that Benjamin Franklin, Pennsylvania's representative in London, was questioned about just how New England was doing so well. In good faith he explained:

> "In the Colonies we issue our own money. It is called Colonial Scrip. ...we control its purchasing power, and we have no interest to pay to no one." (as quoted by Senator Robert Owen, *National Economy and the Banking System*, Senate document 23, Washington DC: US Gov't Printing Office, 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 check 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 passed the Currency Act of 1764, prohibiting the colonies from printing any new paper money (Havermann, op. cit.; Lester, 1939). This had a devastating impact on the economy of New Englland, and the protests that followed are said to have contributed to the momentum that culminated in the War of Independence, rather than a minor tax on tea. Benjamin Franklin is quoted by Senator Owen to also 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" (Senator R. Owen, 1939, op. cit).

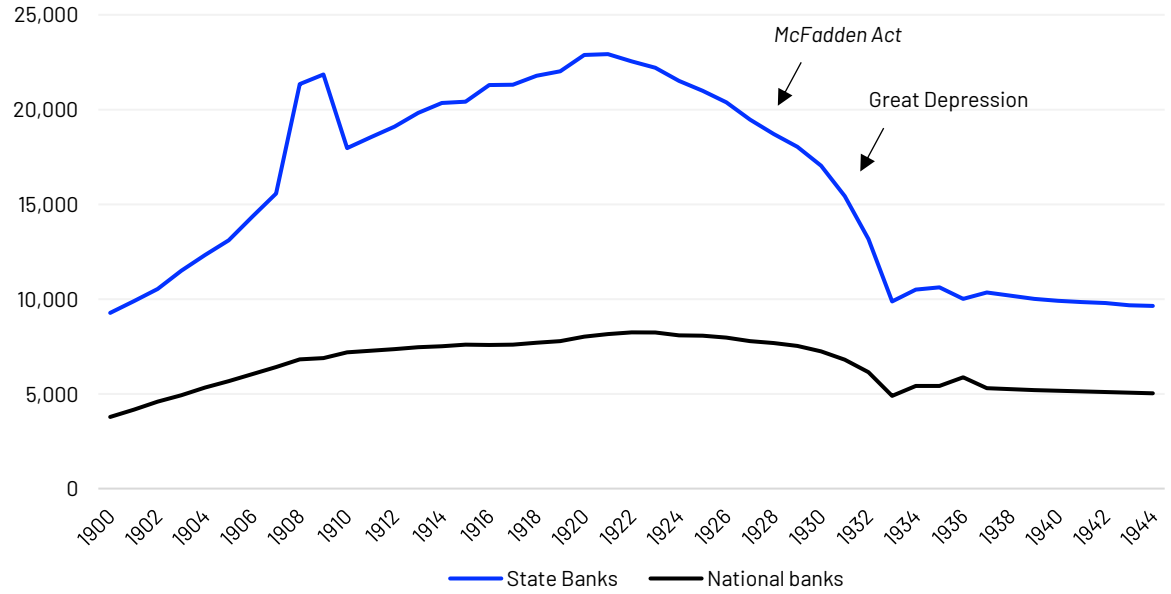
It is only with the end of the issuance of State paper money that, a few years later, the first bank in U.S. history was granted a charter by congress, the Bank of North America in 1782. This was followed by the first two state-run institutions, The Massachusetts Bank and the Bank of New York in 1784. 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. Meanwhile, the charter of the First Bank of the United States expired in 1811 without being extended.

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 and also to businesses, thus creating the need for a domestic supply of credit.

'The Second Bank of the United States' was granted a twenty-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 US 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 a shrinking economy and declining prices – the deflationary Great Depression.



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

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 largely in place until the 1980s.

Concerning the question of state-owned banks, by the year 1900, Virginia and Kentucky were the only states remaining with state-owned banks. Today the only state bank across the U.S. is the Bank of North Dakota.

- Alabama, Kentucky, Illinois, Vermont, Georgia, Tennessee, and South Carolina all established banks which were owned, in their entirety, by the state government.
- Missouri, Indiana and Virginia had banks with the State holding a majority interest
- By 1900, only Virginia and Kentucky state banks survived.
- In 1919, the Bank of North Dakota was founded, as banks outside of North Dakota charged farmers in North Dakota what was considered extortionate interest rates.
- Today, the only state-bank remaining is the Bank of North Dakota.

6.3 Domestic legislation, including recent examples

Recent legislation has enabled a number of states to establish state-level or public banks. The below list was compiled by Catherine Austin Fitts and associates. However, it should be noted that since these laws have been passed, they have not actually yet resulted in the establishment of a state bank.

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. [25]

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.[26]

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.[27]

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.[28]

Washington: Creating the Washington state public infrastructure bank. [29]

2022:

[25] (sources: HD.2677 (https://malegislature.gov/Bills/193/HD2677) and SD.1589 (https://malegislature.gov/Bills/193/SD1589))

[26] (sources: A2536 (https://www.nysenate.gov/legislation/bills/2023/A2536) and S1756 (https://www.nysenate.gov/legislation/bills/2023/s1756))

[27] (sources: HB 2763 (https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB2763/Introduced))

[28] (source: SB 501 (https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/SB0501/Introduced))

[29] (source: SB 5509 (https://app.leg.wa.gov/billsummary?BillNumber=5509&Year=2023&Initiative=false))

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. [30]

New Mexico: Public Banking Act[31]

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.[32]

2021:

Massachusetts: An Act to establish a Massachusetts public bank. [33]

New Mexico: An Act Relating to Public Finance; Enacting the Public Banking Act; Creating the Public Bank of New Mexico. [34]

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.[35]

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.[36]

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.[37]

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.[38]

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

[30] (source: HJR 205 (https://olis.oregonlegislature.gov/liz/2022R1/Downloads/MeasureDocument/HJR205))

[31] (source: HB 75 (https://www.nmlegis.gov/Legislation/Legislation?Chamber=H&LegType=B&LegNo=75&year=22))

[32] (source: A 8857 (https://www.nysenate.gov/legislation/bills/2021/A8857))

[33] (sources: S665 (https://malegislature.gov/Bills/192/SD1712) and H122 (https://malegislature.gov/Bills/192/HD3247))

[34] (sources: SB 313 (https://www.nmlegis.gov/Sessions/21%20Regular/bills/senate/SB0313.pdf) and HB 236 (https://nmlegis.gov/Sessions/21%20Regular/bills/house/HB0236.pdf))

[35] (source: HB 240 HD1 (https://www.capitol.hawaii.gov/sessions/session2021/bills/HB240_HD1_.PDF))

[36] (source: HB 1103 (https://www.capitol.hawaii.gov/sessions/session2021/Bills/HB1103_.pdf))

[37] (source: S 1055 (https://www.nysenate.gov/legislation/bills/2021/s1055))

[38] (source: A 3309 (https://www.nysenate.gov/legislation/bills/2021/A3309))

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.[39]

Oregon: Establishes Bank of the State of Oregon.[40]

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 has been introduced at the request of the Oregon Public Bank Alliance.[41]

Washington: Concerning the creation of the Washington state public bank. [42]

States that introduced legislation prior to 2021:

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

6.5 International

A few key examples of state banks with a remit to support economic growth are highlighted.

Germany:

Many German states established state-level, state-owned banks in the 19th century. 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 co-operate with the local banks. In 2021 it recorded assets of $90 billion.

[39] (sources: S 1762 (https://www.nysenate.gov/legislation/bills/2021/S1762) and A 5782 (https://www.nysenate.gov/legislation/bills/2021/A5782))

[40] (source: SB 399 (https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/SB339/Introduced))

[41] (source: HB 2743 (https://olis.oregonlegislature.gov/liz/2021R1/Measures/Overview/HB2743))

[42] (source: SB 5188 (https://apps.leg.wa.gov/billsummary?BillNumber=5188&Initiative=false&Year=2021))

Today, the Federal Republic of Germany continues to operate **62 state-owned banks**, among the largest number of any country in the world. It also has national public banks, of which the nationally-owned **KfW (Kreditanstalt für Wiederaufbau)**, founded in 1948, is the largest. It is a fully state-owned bank that has the overarching purpose of supporting economic development (nowadays also outside Germany). Also in international comparison, KfW is the largest national development bank in the world: At the end of 2023, the assets of KfW stood at **EUR 560 billion**, with 8,150 employees.

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 until now have obtained 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.

KfW 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) are not-for-profit local community banks (public savings banks or mutually owned co-operative banks). Thus the role of KfW is similar to the role the State Bank of Michigan could play on the state-level in the US.

United Kingdom:

The British Business Bank plc, a government-owned development bank for the United Kingdom. In 2023, having existed for a decade, it recorded assets of GBP 3.6bn. It employed 562 staff. Since its equity is almost as large as assets, at GBP 3.2bn, it is apparent that it does not actually operate as a bank, and indeed it has no banking license. This explains why this institution failed to grow in line with banks.

The German KfW state bank attracted the attention of members of the British government cabinet, particularly Sir Vince Cable as Secretary of State for Business, Innovation and Skills. Taking KfW as a model, he established the British Business Bank 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. yyy

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. The lacking ingredient in the UK is 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, which do not yet exist.

Japan

On 24 January 1947 by law of 7 October 1946, the Reconstruction **Reconstruction Finance Bank (RFB)** (*Saiken Kin'yū Kinko*, 債券金融金庫) was established to help finance the country's postwar reconstruction. It was officially modelled on the US Reconstruction Finance Corporation, and took over the special reconstruction lending operations that had so far been undertaken by the Industrial Bank of Japan, a major long-term credit bank that had been funding itself mainly from the Bank of Japan.

RFB functioned by providing long-term, low-interest loans to industries, businesses, and infrastructure projects critical to Japan's recovery from the devastation of World War II. The bank played a major role in rebuilding key industries, such as steel, coal, shipbuilding, and electric power, which were essential to Japan's economic resurgence.

> "The Reconstruction Finance Bank became the central institution in the priority finance system, and when it began full-fledged lending in fiscal 1947, it was swamped with requests from companies for both capital investment financing and operating funds. One reason for this was that private-sector institutions were still reconstructing and reorganizing and remained unable to lend as aggressively as they would have liked." (Ministry of Finance, 2010).

Initially, the government planned to provide reconstruction financing from a special account, i.e. it would have been funded by the fiscal budget. But insightful Ministry of Finance bureaucrats argued that reconstruction finance should be provided by bank credit creation. Therefore, the RFB was established as a new government finance bank for this purpose.

Notable is the fact that the RFB was a full-blown bank, including the privilege to create credit. It was primarily funded by:

1. Government bonds – The Japanese government issued special Reconstruction Bonds to finance the bank's activities. The initial capital was entirely provided by the government.
2. Bank of Japan loans – The Bank of Japan (BOJ) provided funding to the RFB through monetary expansion, injecting liquidity into the economy.
3. Deposits from commercial banks – The RFB received funding from private banks that were encouraged (or required) to contribute to the reconstruction effort.
4. Issuance of its own bonds. The RFB issued bonds that were sold in the open market. Other financial institutions but also investors in general acquired the bonds.

The Bank of Japan was instructed by the Ministry of Finance (in line with the 1942 Bank of Japan Law, which makes clear that the central bank receives instructions from the government and has to support government policies) to purchase its Reconstruction Bonds, and therefore a significant amount of RFB funding, one way or another, came from the central banks.

The Bank of Japan was not satisfied with this situation. Its general resistance to supporting government policy is documented in Werner (2003/2018). It found strong allies in US financial circles, partly introduced by the post-war governor of the Bank of Japan, Eikichi Araki (who would a few years later even become Japanese ambassador to the USA). As a result, the U.S. Occupation authorities (SCAP, the Supreme Commander of Allied Powers, led by General Douglas MacArthur) sided with the Bank of Japan and argued that this bank was distorting the economy. SCAP also invited US banker Joseph Dodge, chairman of Detroit Bank, to visit Japan and advise on its banking system. Joseph Morrell Dodge (1890–1964) had experience working with the U.S. government on economic stabilization policies in Germany after WWII.

In 1949, Dodge was requested to visit Japan as an economic advisor by the U.S. government and SCAP. His mission was to ensure that inflation would be reduced and he also believed that government intervention should be minimised to ensure financial stability.

Dodge strongly criticized the Reconstruction Finance Bank (RFB), arguing that

1. **Its existence fueled inflation** – The RFB issued excessive credit to industries without sufficient financial discipline, which contributed to Japan's postwar hyperinflation.
2. **It distorted the banking system** – The RFB reflected government intervention favouring politically selected industries rather than allowing market forces to allocate capital.

As a result, the Reconstruction Finance Bank was dissolved in 1952, with many of its loans transferred to the newly formed **Development Bank of Japan (DBJ)** and other government financial institutions.

The Development Bank of Japan was founded in 1951 as the Japan Development Bank. In 2022 it had $162 billion in assets, 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.

Why was SCAP not concerned about the Development Bank of Japan and other government banks? Because the major difference to the Reconstruction Finance Bank is that all the later government banks are not actually banks: They have no power to create credit. Instead, their lending each year is funded by a new injection of government funding, either from the budget, or from government pension or savings accounts.

Consequently, the state-owned banks engaged in commercial lending have actually been non-banks since 1952, and their impact on economic growth declined significantly, compared to the RFB or Germany's KfW.

Bulgaria

Another recently founded state-owned bank is the Bulgarian Development Bank, which in 2023 employed 250 staff, lent to 5,600 small firms (old and new loans) and its total assets reached EUR 1.4bn.

For comparison, this national development bank is similar in size to the assets of just one of the ca. 1000 small community banks in Germany, such as the one in the hometown of the author, VR Bank Landau Mengkofen e.G., which also has 250 employees, and whose assets stood at EUR 1.6bn at the end of 2023, lending more than EUR 1bn to local borrowers.

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 United States of America (more than 5,000). Likewise in India the state has always owned a number of banks and has also engaged in ensuring bank credit creation is guided towards particular sectors such as agriculture.

7. 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 basis of the well-known "quantity theory of money", and its fundamental relationship between money and the economy, called the "equation of exchange".

This equation links the "real economy" (*Y*) (what we today call real Gross Domestic Product, or GDP), the price level (*P),* and the amount of money (*M*), which circulates with a given velocity (*V*).

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

In other words, for nominal GDP growth (change of PY), one needs an increase in the effective money supply (MV). For a while, especially in the 1950s and 1960s, this relationship worked well empirically, and the data seemed to suggest the equation was valid, which meant that velocity *V* was relatively constant or stable, and the link between money *M* and the real economy *Y* was understood: more money, more nominal economic activity. This explains the rise of the monetarist approach to macroeconomics, which is based on this relationship. A vocal proponent had been Milton Friedman.

In the 1970s, however, the equation began to break down, and velocity *V* no longer seemed stable; it actually fell substantially during the early 1970s and again during the second half of the 1980s across industrialized countries. This was catastrophic for macroeconomics, since not only the monetarist approach relied on this equation, but also alternative approaches, including neoclassical economics, Keynesian and post-Keynesian economics. As Charles Goodhart, a prominent UK monetary economist put it:

> "The equation came apart at the seams during the course of the 1980s" (Goodhart, 1989).

In other words, the link between money and the economy was no longer stable, meaning that economists could not use the money supply to explain or forecast economic growth. After initial research noting the "velocity decline" and the "breakdown of the money demand function" that this entailed, the economics profession reacted by capitulation, and dropped money altogether from virtually all economic models (the infamous DSGE models without any monetary aggregate and that did not see room for financial crises).

During the 1990s, a series of papers by Werner (1992, 1997) appeared that showed that the above equation was still valid, if updated appropriately to fit 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 used for transactions in the real economy (C_R), like loans for businesses and consumption, and money used for asset purchases, speculation and such 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 many researchers now recognise, *banks create money when they grant loans*. The Bank of England, for example, explains in a 2014 paper that:

> "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" (Bank of England, 2014)

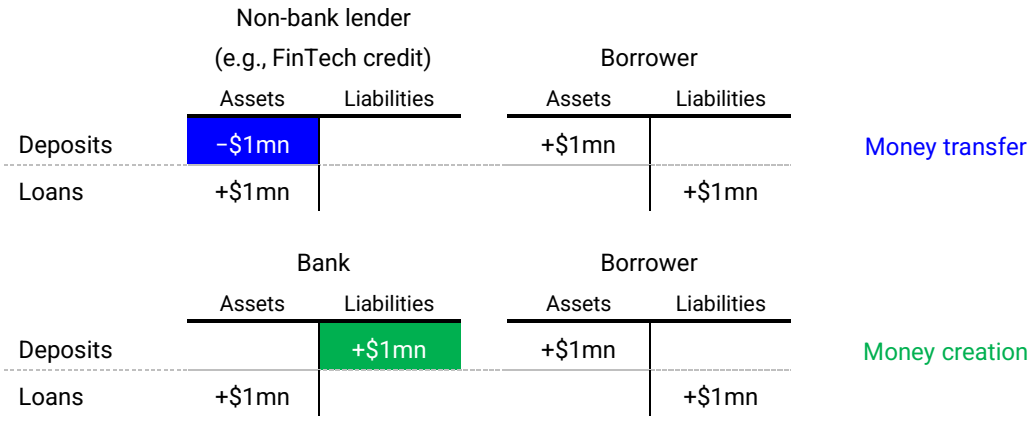
More recently, the Bundesbank stated that:

> "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" (Bundesbank, 2017)

According to the UK's most prominent monetary economist, Charles Goodhart, this new view "is now taking over as the consensus approach" (Goodhart, 2017).

In a landmark experiment, Richard Werner (2014a) performed an 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 and recording all the internal transactions that the bank conducted or 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. 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 book-keeping exercise. The next figure shows the structural difference between bank and non-bank lending mechanics.



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

Thus, the above quantity equation is recognized as a special case that holds when no credit is extended for asset purchases, but only for the 'real economy'. Whenever there is also credit creation for asset purchases, a second equation has to be added, so that the general formulation of the quantity equation is as follows, consisting of two separate equations as monetary flows, measured by credit C, are divided into 'credit for the real economy', denoted with subscript r, and 'credit for financial or asset purchases', denoted by subscript f:

$$CV = C_R V_R + C_F V_F$$

Likewise, total transaction value can be disaggregated into the value of transactions for the real economy and the value of transactions for asset purchases:

$$PQ = P_R Q_R + P_F Q_F$$

Pairing credit creation for the real economy with the value of real economy transactions, we obtain:

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

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

Likewise for financial or asset transactions:

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

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

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:

$$\Delta P_R Y = \Delta nGDP = \Delta C_R{}^b V_R$$

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

Finally, using year-on-year growth rates:

$$\Delta nGDP \,/\, nGDP = \Delta C_R / C_R \qquad (1)$$

$$\Delta P_F A \,/\, P_F A = \Delta C_F / C_F \qquad (2)$$

This General Quantity Theory, also known as the *quantity theory of disaggregated credit (QTDC),* has two predictions:

- Equation (1): the economy grows if bank credit for the real economy grows
- Equation (2): asset bubbles are caused by non-productive bank lending for asset purchases

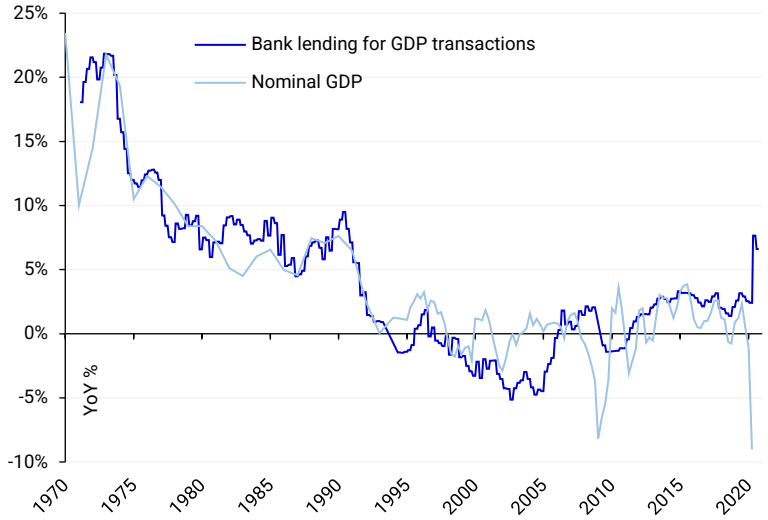
Since it was formulated in the 1990s by Werner, other scholars have put the theory to test with successful results.[43] Virtually all of the papers found that bank lending to the real economy, measured in various ways, was the only statistically significant variable explaining nominal GDP growth.

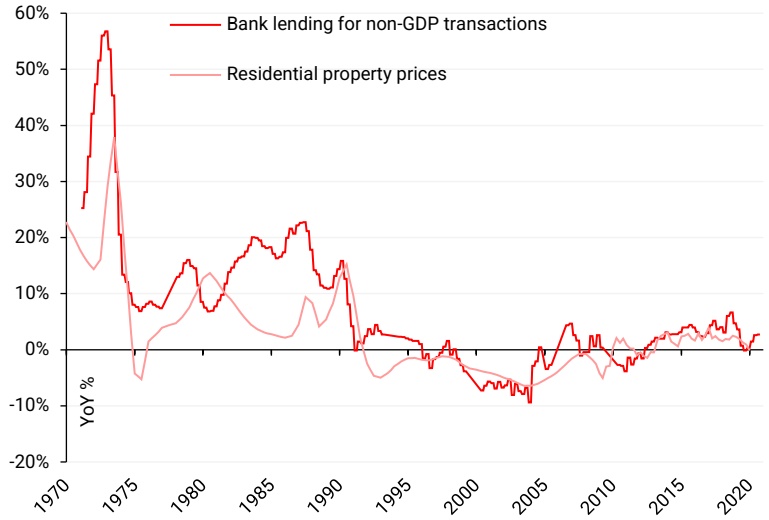
The next figure shows estimates by Werner (1997) for the Japanese economy during the 1980s and 1990s. The left panel shows the first prediction of the theory, namely, that nominal GDP growth ought to be caused by bank credit for GDP transactions. The right panel shows the second prediction: asset bubbles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

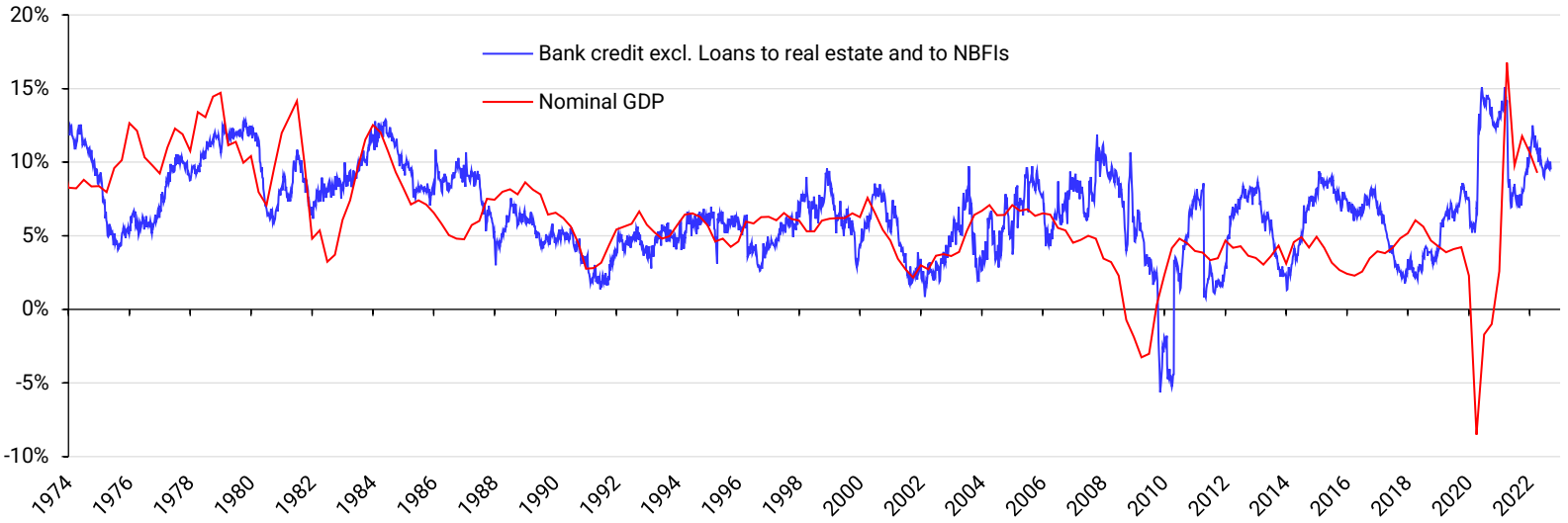
The econometric tests performed by Werner confirmed the predictions, but we can see by visual inspection that the theory is very plausible. The two graphs below use Japanese (top) and American (bottom) data.[44]

[43] 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).

[44] 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).







Top: bank lending in Japan. Source: Werner (1997), Bank of Japan. In blue: growth of total U.S. commercial bank credit excluding loans to real estate and loans to non-bank financial institutions. Bottom: in read: U.S. nominal GDP growth. Source: Board of Governors of the Federal Reserve, H.8 Assets and Liabilities of Commercial Banks in the United States.

In the area of banking and macroeconomics, Richard Werner's quantity theory of credit stands as the empirically most successful theory, both in back testing and in out-of-sample forecasting into the future. For instance, based on this, Werner (1991) predicted that Japanese banks were likely to veer on the verge of bankruptcy and the economy was likely to fall into the biggest recession since the Great Depression.

The theory has far reaching implications:

The economy can only grow if banks create credit for activities that contribute to GDP

This includes lending to firms which will invest (*I*) in machinery, R&D, staff training, acquisition of fixed assets, etc.; lending to governments (*G*) who will spend on paying civil servants and infrastructure projects, and lending to households for consumption (*C*). GDP can also be stimulated when banks lend to successful exporters, since GDP or national income can be broken down into the following expenditures:

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

However, if bank credit funds nominal GDP transactions, such as consumption and consumptive government expenditure (for instance on armament spending, which is not productive, either), inflation is likely to result, since the increase in claims on finite resources (due to the expansion in the money supply via bank credit creation) is not matched by an increase in goods and services or value added contributing to the economy.

Asset bubbles can be prevented

This can be done by redirecting bank lending away from mortgages and financial sector lending to lending for productive business investment by non-financial firms. Smalls firms are ideally suited as receivers of loans that contribute to the economy via expanded business investment.

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.[45]

Bank lending to non-GDP activities, on the other hand, such as loans to hedge funds and private equity funds or property loans to purchase existing housing stock increase debt but do not increase GDP. They lead to ever higher debt-to-GDP ratios which create crises, recessions and debt overhangs that stifle growth. They also decrease housing affordability and increase inequality through capital gains.

Lending for consumption can create inflation. Lending for investment is less inflationary

[45] In a world with high debt-to-GDP ratios, this is most welcomed.

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 funding from non-bank financial intermediaries, such as investment funds or securities companies, bank lending creates money, and if allocated appropriately, it can make whole communities and regions grow in a sustainable way.

Furthermore, SMEs are the biggest employer in most countries, accounting for more than two thirds of employment. They are the backbone of any economy. As mentioned, a dramatic case in point is provided by German SMEs: well-served by the hundreds of small, non-for-profit community banks, these SMEs can access funding to grow. During the 2008-09 recession, unlike the big German banks, the small banks increased lending to their SME customers when they most needed it. Thanks to its large number of small local banks lending to local SMEs, 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 exports.

8. Establishing the State Bank of Michigan (SBM)

According to FDIC data, Michigan's 70 community banks (defined as those with total deposits <$1 billion and with >50% of their deposits booked in Michigan) have a combined balance sheet of $23.7 billion.[46] For SBM to be able to purchase at least 20% worth of these banks' loans (or $4.7 billion), SBM 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**.[47]

According to Urban Institute, Michigan enacted its FY 2024 budget in July 2023. The budget reported $15.2 billion in general fund spending and $81.7 billion in total spending.[48] That is, setting up SBM would cost 0.61% of the State's annual expenditure. Ideally, this cost would be a one-off expense, as SBM would replenish and grow its capital using retained profits.[49] Moreover, it should be possible to source this investment not from the annual fiscal budget of the State – which is usually politically fought over – but from reserves, as this is capital expenditure, a profitable long-term investment for the State. It is also possible to source this initial and one-off founding capital from State pension funds or other sources at the disposal of the State.

After this one-off investment is made and SBM is capitalized, all set-up costs would be defrayed from capital. Moreover, it should not be necessary for the State to make any further investment into SBM after this. To the contrary, within ca. three years, SBM should be profitable and able to pay a regular dividend to its owner, which would rise in absolute amounts over the years and become a valuable source of income for the State, supplementing tax revenues.

With a capital of $500 million, SBM would over the following three years build up a balance sheet of $10 billion without any further funding from the State. This is standard banking practice: Banks fund their activities principally not from capital, but by raising their own funds, via a mix of debt and deposits. Deposits can be expected from community banks, from the TSG and from State-related entities, such as pension funds. Bonds can be issued and placed with investors in the markets.[50] On the asset side, SBM would hold loans and other investors, such as municipal bonds and bonds issued by the TSG. The loan balance would include loans purchased from Michigan community banks, and loan participations with Michigan community banks.

The balance sheet mechanics are shown below.

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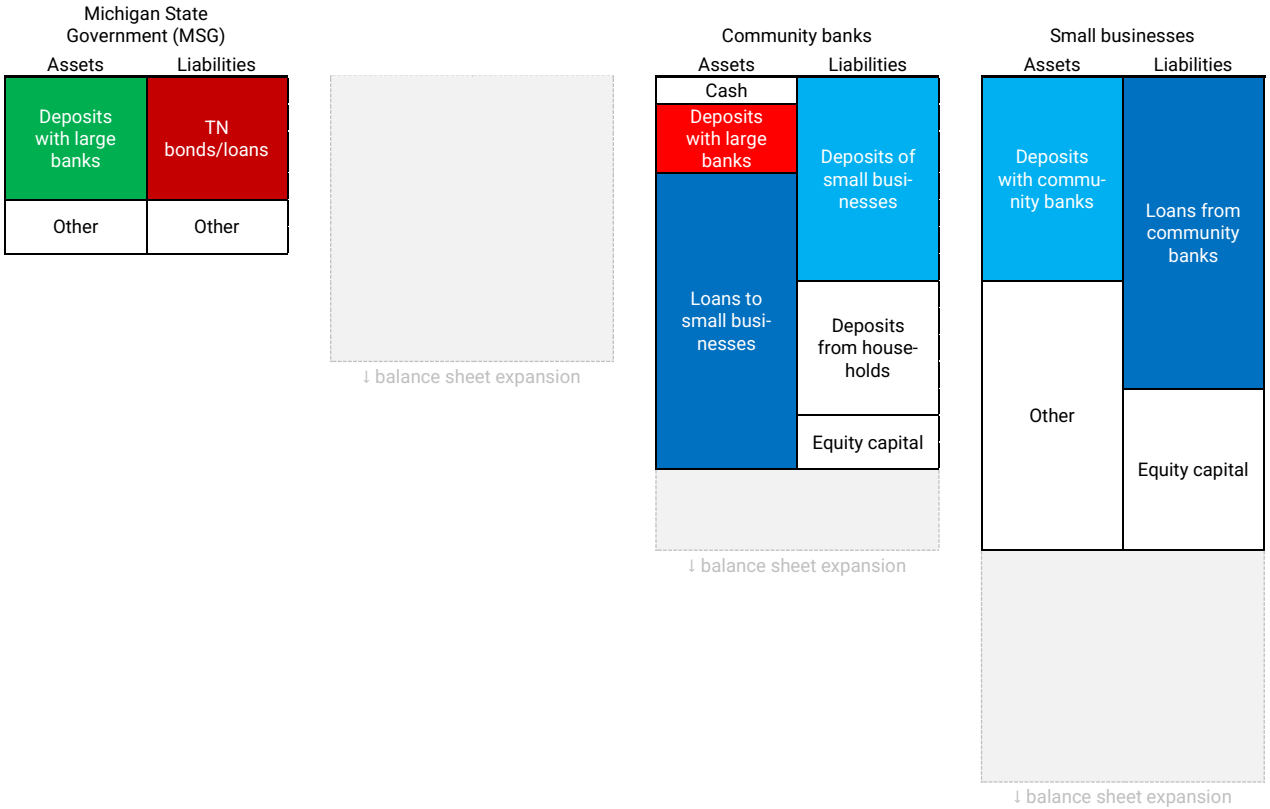
[46] Source: FDIC, deposit market share report.

[47] 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).

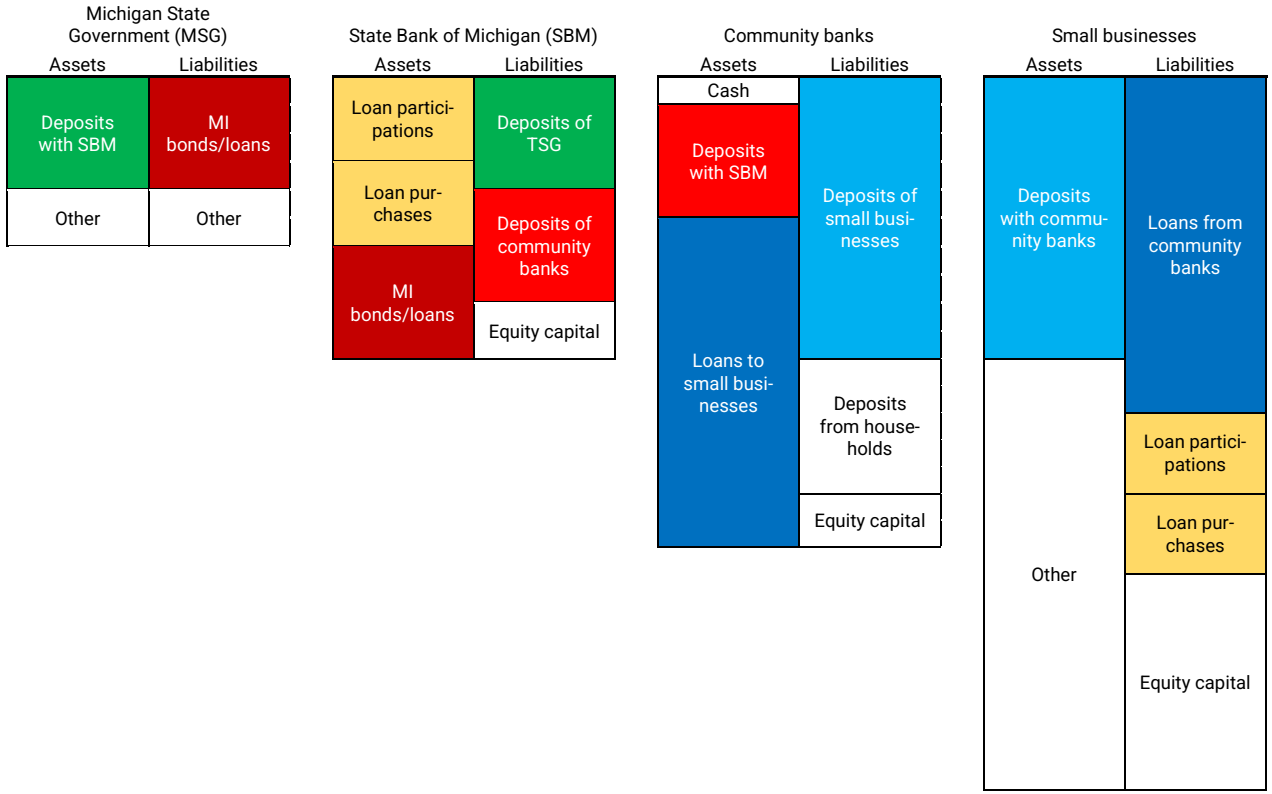
[48] Urban Institute.

[49] *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

[50] 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 TSG. For community banks, this would represent shifting around 15.2% ($5/$32.7) of their assets to SBM, which is a reasonable figure.



Balance sheet structure *before* the introduction of SBM.



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

Conclusions

It is usually beneficial for all stakeholders to create a new bank. Banking is one of the most reliably profitable industries, with return on equity usually in the double-digits. The reason for this is that bank capital is usually not much more than 10% of total assets, so that return on assets of 2% translate into RoE for investors of 20%. This also applies to the State Bank of Michigan.

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 its 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 act as a hub bank that is supportive of them, similarly to the Federal Reserve Bank of New York acting towards the banks in Manhattan that are its owners. A state bank in Michigan would have many and significant benefits (as listed in section V), including that it would act to insulate the economy of the State of Michigan from contagion threatened by external financial instability. It would also create a highly valuable financial sector infrastructure located within the State of Michigan, so that it will be easier to shield Michigan from adverse events, but also undesirable policy initiatives coming from the outside.

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 USA. 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 Michigan would act to halt the steady decline in the number of banks in the US. 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 is to further increase their already vast powers and political independence via the creation of central bank digital currency and other centralizing mechanisms.

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

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

Appendix A: Bio: Richard Werner

Professor Richard A. Werner, MA, D.Phil. (Oxon), is a London School of Economics and Oxford-educated economist, university professor of banking and economics at the University of Winchester, England, authorised 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, Richard advised numerous institutional and government clients, including US 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 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 5000 staff. From 2010 to 2020 he was a member of the ECB Shadow Council, and from 2010 to 2024 has been involved in planning and establishing community banks via the not-for-profit social enterprise without shareholders Local First Community Interest Company.

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Appendix B: Deposit market shares for Michigan

			Outside of market		Inside of market		
Institution Name	State (Hqrtd)	Charter	No. of offices	Deposits ($000)	No. of offices	Deposits ($000)	Market share
JPMorgan Chase Bank, National Association	OH	Federal	4697	1,999,546,278	178	68,495,722	23.37%
The Huntington National Bank	OH	Federal	738	115,534,351	313	36,512,646	12.46%
Comerica Bank	TX	State	231	34,495,368	178	33,116,632	11.30%
Bank of America, National Association	NC	Federal	3734	1,848,322,167	77	30,838,488	10.52%
PNC Bank, National Association	DE	Federal	2307	411,462,113	135	23,048,512	7.86%
Fifth Third Bank, National Association	OH	Federal	914	149,502,711	168	20,144,609	6.87%
Flagstar Bank, National Association	NY	Federal	322	74,879,603	114	13,747,562	4.69%
Citizens Bank, National Association	RI	Federal	1021	173,949,596	72	6,764,570	2.31%
Independent Bank	MI	State	0	0	61	4,557,023	1.55%
Mercantile Bank	MI	State	0	0	42	3,775,809	1.29%
Northpointe Bank	MI	State	0	0	1	3,037,034	1.04%
First National Bank of America	MI	Federal	0	0	3	2,955,877	1.01%
First Merchants Bank	IN	State	91	11,881,926	31	2,777,625	0.95%
Bank of Ann Arbor	MI	State	0	0	18	2,485,544	0.85%
Macatawa Bank	MI	State	0	0	29	2,329,925	0.79%
ChoiceOne Bank	MI	State	0	0	31	2,096,414	0.72%
Old National Bank	IN	Federal	243	34,803,035	20	1,744,002	0.60%
Horizon Bank	IN	State	47	4,038,521	26	1,743,613	0.59%
Isabella Bank	MI	State	0	0	30	1,729,595	0.59%
KeyBank National Association	OH	Federal	966	146,793,848	19	1,390,373	0.47%
The State Bank	MI	State	0	0	20	1,380,014	0.47%
Southern Michigan Bank & Trust	MI	State	0	0	17	1,187,875	0.41%
CIBC Bank USA	IL	State	23	38,874,994	1	1,150,826	0.39%
County National Bank	MI	Federal	0	0	14	1,068,732	0.36%
First State Bank	MI	State	0	0	11	880,315	0.30%
Superior National Bank	MI	Federal	0	0	10	862,899	0.29%
The Dart Bank	MI	State	0	0	4	839,798	0.29%
Northstar Bank	MI	State	0	0	10	812,618	0.28%
Sturgis Bank & Trust Company	MI	State	0	0	17	796,616	0.27%
West Michigan Community Bank	MI	State	0	0	8	785,477	0.27%
First National Bank of Michigan	MI	Federal	0	0	6	765,074	0.26%
Nicolet National Bank	WI	Federal	45	6,492,449	14	762,106	0.26%
United Bank of Michigan	MI	State	0	0	13	750,240	0.26%
University Bank	MI	State	0	0	1	737,877	0.25%
Oxford Bank	MI	State	0	0	8	728,543	0.25%
West Shore Bank	MI	State	0	0	9	540,656	0.18%
Commercial Bank	MI	State	0	0	9	515,631	0.18%
Thumb Bank and Trust	MI	State	0	0	13	496,411	0.17%
Highpoint Community Bank	MI	State	0	0	6	493,770	0.17%
IncredibleBank	WI	State	11	1,228,864	6	492,241	0.17%
First Bank, Upper Michigan	MI	State	0	0	9	491,124	0.17%

Eastern Michigan Bank	MI	State	0	0	11	476,515	0.16%
Range Bank	MI	State	1	6,005	8	467,862	0.16%
First Independence Bank	MI	State	2	3,900	2	457,516	0.16%
Citizens National Bank of Cheboygan	MI	Federal	0	0	10	451,476	0.15%
Premier Bank	OH	State	73	6,604,531	5	446,918	0.15%
Tri-County Bank	MI	State	0	0	12	445,491	0.15%
Grand River Bank	MI	State	0	0	2	445,003	0.15%
1st State Bank	MI	State	0	0	5	429,922	0.15%
Lake-Osceola State Bank	MI	State	0	0	11	414,978	0.14%
Century Bank and Trust	MI	State	0	0	10	410,521	0.14%
Auto Club Trust, FSB	MI	Federal	0	0	1	379,638	0.13%
Central Savings Bank	MI	State	0	0	9	378,710	0.13%
Chelsea State Bank	MI	State	0	0	3	373,545	0.13%
First Community Bank	MI	State	0	0	10	363,104	0.12%
Eaton Community Bank	MI	Federal	0	0	7	342,953	0.12%
Honor Bank	MI	State	0	0	8	336,800	0.11%
First National Bank & Trust Co.	MI	Federal	0	0	7	328,703	0.11%
The Shelby State Bank	MI	State	0	0	10	328,596	0.11%
State Savings Bank	MI	State	0	0	6	314,956	0.11%
The First National Bank of St. Ignace	MI	Federal	0	0	7	306,205	0.10%
Waterford Bank, N.A.	OH	Federal	2	1,151,097	2	295,336	0.10%
1st Source Bank	IN	State	73	6,692,277	8	284,743	0.10%
Union Bank	MI	State	0	0	8	279,607	0.10%
Huron Community Bank	MI	State	0	0	7	273,050	0.09%
Upper Peninsula State Bank	MI	State	0	0	5	253,337	0.09%
Charlevoix State Bank	MI	State	0	0	7	244,468	0.08%
Alden State Bank	MI	State	0	0	4	242,750	0.08%
The Northern Trust Company	IL	State	56	39,267,485	2	229,587	0.08%
Huron Valley State Bank	MI	State	0	0	4	224,699	0.08%
Mi Bank	MI	State	0	0	1	196,098	0.07%
Dearborn Federal Savings Bank	MI	Federal	0	0	5	180,239	0.06%
Citizens State Bank	MI	State	0	0	2	177,542	0.06%
Peoples State Bank of Munising	MI	State	0	0	5	168,850	0.06%
Northern Interstate Bank, N. A.	MI	Federal	0	0	6	164,718	0.06%
Capitol National Bank	MI	Federal	0	0	2	161,274	0.06%
Gogebic Range Bank	MI	State	0	0	4	139,876	0.05%
The State Savings Bank of Manistique	MI	State	0	0	3	136,208	0.05%
Baybank	MI	State	0	0	3	129,276	0.04%
Bay Port State Bank	MI	State	0	0	4	129,193	0.04%
Sterling Bank and Trust, FSB	MI	Federal	27	2,029,136	1	122,980	0.04%
The Miners State Bank	MI	State	0	0	5	116,102	0.04%
Sidney State Bank	MI	State	0	0	2	112,060	0.04%
G. W. Jones Exchange Bank	MI	State	0	0	4	111,442	0.04%
Kalamazoo County State Bank	MI	State	0	0	3	110,204	0.04%
Blissfield State Bank	MI	State	0	0	1	107,573	0.04%
Old Mission Bank	MI	State	0	0	2	107,320	0.04%
Bank Michigan	MI	State	0	0	3	95,146	0.03%
Mayville State Bank	MI	State	0	0	2	91,901	0.03%
The Stephenson National Bank and Trust	WI	Federal	5	492,801	1	72,459	0.02%
Huron State Bank	MI	State	0	0	1	72,033	0.02%
Homestead Savings Bank	MI	Federal	0	0	3	69,433	0.02%

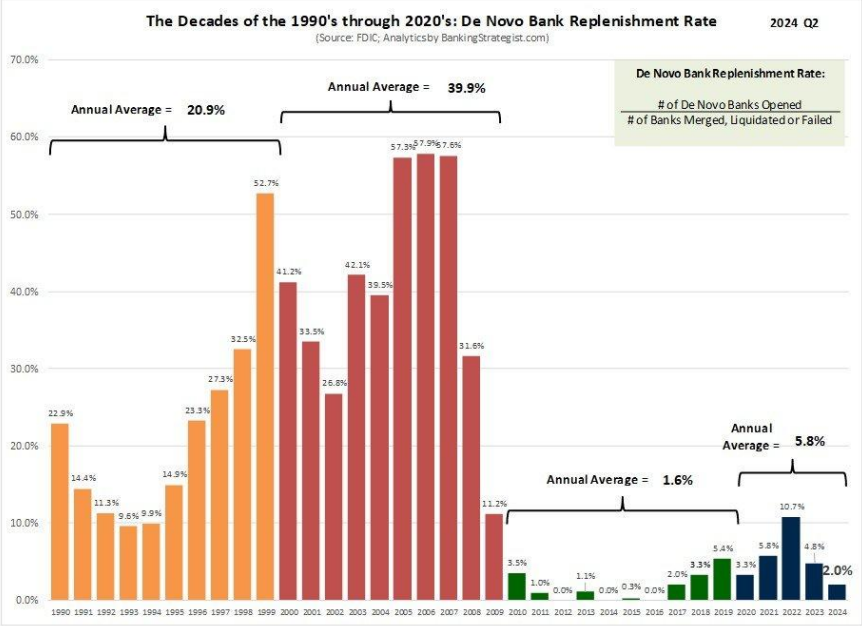
The Port Austin State Bank	MI	State	0	0	1	57,800	0.02%
The First National Bank of Wakefield	MI	Federal	0	0	2	50,781	0.02%
Freeland State Bank	MI	State	0	0	1	48,129	0.02%
Liberty Bank and Trust Company	LA	State	18	901,605	1	48,044	0.02%
First State Bank of Decatur	MI	State	0	0	1	43,095	0.01%
Farmers State Bank	IN	State	11	994,400	1	28,444	0.01%
Comerica Bank & Trust, National Association	MI	Federal	0	0	1	506	0.00%
JPMorgan Chase Bank, Dearborn	MI	State	0	0	1	500	0.00%
Community Unity Bank	MI	State	0	0	1	3	0.00%
Wilmington Trust, National Association	DE	Federal	40	8,937	1	0	0.00%
Wells Fargo Bank, National Association	SD	Federal	4550	1,360,214,996	1	0	0.00%
	20248	2018	293106636	100			

Source: FDIC, deposit market share report.

Appendix C: U.S. de novo banks statistics

Excludes corporate reorganizations and spin-offs.

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



US bank replenishment rate. Source: Banking Strategist.

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