Branching Out: Bank Deregulation and Long-Run Growth*

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Abstract

We show how banks can improve capital mobility and shape long-run local development by studying one of the largest but mostly overlooked waves of bank deregulation in the United States. In the aftermath of the Great Depression, half of US states meaningfully relaxed restrictions on bank branching for the first time. These new state-level legal regimes remained largely unchanged until the interstate branching deregulations of the 1970s, by which point over 70% of banking offices were already part of branch networks. We show that this first wave of regulatory changes had persistent real effects which did not disappear with later nationwide banking innovations. Areas which deregulated early experienced significantly higher deposit growth and real manufacturing value-added growth into the 2010s. Using a novel dataset of branch-level balance sheets, we show that these effects stem from branch networks' internal capital markets allocating resources to less financially developed areas.

Key words: Bank regulation, Bank branching, Great Depression, Financial development, Economic growth

JEL Classifications: G21, G28, N22, O16, R11

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1 Introduction

The relationship between financial intermediation and economic development remains a central question in economics. In the US, the rise of branch banking over the course of the twentieth century was one of the main transformations to financial market organization, potentially reshaping local financial development by increasing capital mobility. The conventional narrative focuses on the interstate bank branching deregulations of the 1970s and 1980s as the critical turning point, with the prior three decades being characterized by stasis and even financial repression. However, we document for the first time that in fact, by 1970, branching was already a well-established phenomenon with more than 70% of banking offices operating in branch networks (Figure 1a). This widespread adoption stemmed from a transformative but largely overlooked wave of regulatory changes that occurred during the Great Depression, when states meaningfully relaxed limitations on bank branching in response to the financial crisis. These reforms immediately began to reshape banking, with the share of bank offices in branch networks more than doubling from 1930 to 1940. This historical setting allows us to isolate the role of branching from broader changes in national banking markets to ask: did it impact financial development and economic growth? If so, how? And critically, did these local effects persist through subsequent nationwide financial development?

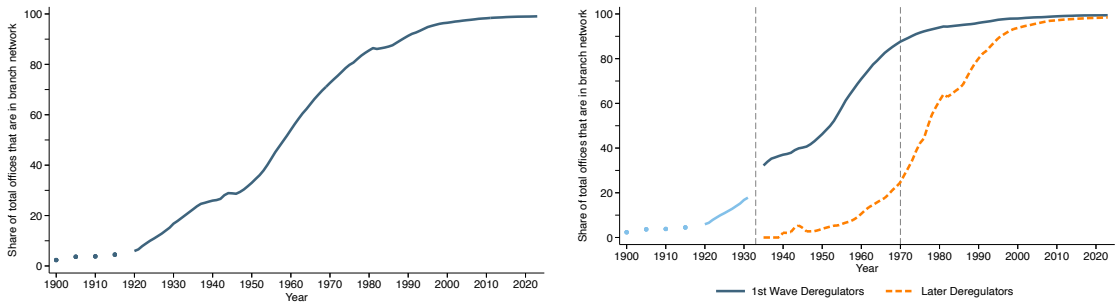
Understanding the economic consequences of this shift from unit to branch banking is an open empirical question central to our investigations. Both business models connect funding sources with lending opportunities, but branch banks can leverage internal capital markets while unit banks must rely exclusively on external capital sources—either from their local economy or the broader banking system. In theory, frictionless capital markets would allow both models to direct resources efficiently, but real-world frictions could give branch networks distinct advantages in capital allocation. Branch expansion might also lower the regulatory and operational costs compared to chartering entirely new unit banks, potentially increasing financial access in underserved areas. The fundamental question we explore is whether (branching-driven) capital access is sufficient to stimulate economic development, which is a question at the heart of how financial intermediation shapes growth.

The Great Depression deregulations provide a unique opportunity to study this question because the nature of the deregulation was distinct from later reforms: while the second wave of the 1970s fundamentally transformed bank competition by enabling the formation of large banking conglomerates that benefit from economies of scale and scope, the 1930s reforms were designed to create small branch networks that operated under significant restrictions. Depression-era branch banks remained remarkably similar to their unit bank counterparts in terms of their overall business model and balance sheet composition. This unique feature of the first deregulation wave allows us to isolate the effects of geographic expansion through branching

from the broader changes in bank business models and market structure that characterize modern banking reforms.

We find two striking patterns. First, local financial development advantages created by early branching deregulation persisted for decades—areas that deregulated in the 1930s experienced significantly higher deposit growth and manufacturing value added into the 2010s. Second, and perhaps more surprisingly, these local advantages were not eliminated by subsequent national financial development. The post-1970s deregulation created system-wide benefits but did not lead to convergence in local development trajectories that had been established by the earlier wave of reforms. This persistence is particularly pronounced in initially poorer regions, suggesting a path dependence in the finance-growth nexus where early institutional arrangements can shape economic outcomes for generations. By tracking these effects through nearly a century of financial development, our study provides new insights into how local financial institutions can create durable advantages that national policy changes may not fully address.

Figure 1: Banking Offices in Branch Networks



(a) Nationwide branch share

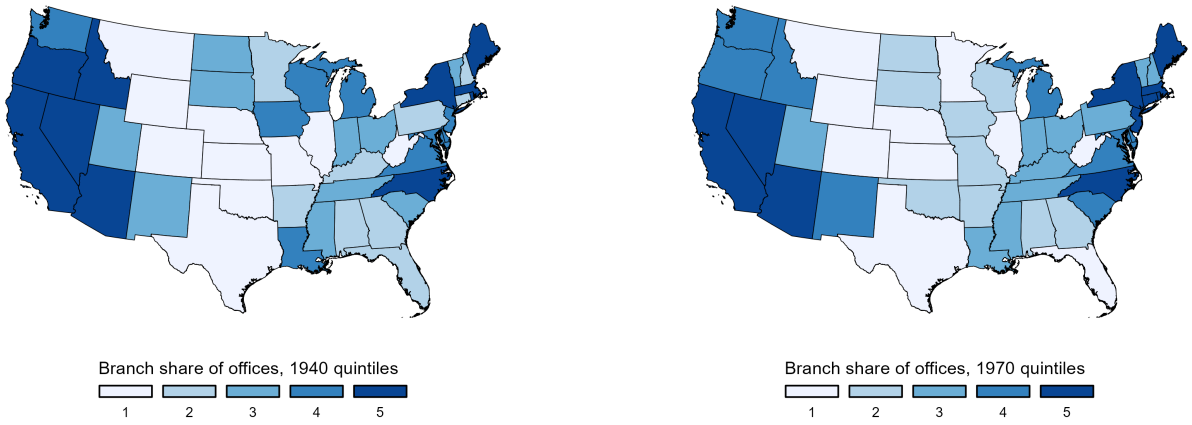
(b) Branch share by 1939 laws

Notes: From 1935 onwards, the time series banking outcomes for FDIC-insured commercial banks only. Legal status observed in state session laws. Legalization includes all states permitting any form of branch banking. First wave refers to those referring to those states allowing cross-city branching by 1939 while second wave captures all later deregulators. Sources: State session laws, Federal Reserve System (1931), FDIC BankFind, and authors' calculations.

Second, we find that both the regulatory changes and their effects were remarkably long-lived. Drawing on our comprehensive data hand-collected from state session laws and banking reports spanning eight decades, we find that following the wave of deregulation in the 1930s, states rarely changed their restrictions in subsequent decades. As a result, the degree of deregulation across states in the 1930s shaped the geographic distribution of bank branching for more than half of the 20th century. This persistence is evident in Figure 2, which shows how the different types of laws enacted during the Great Depression influenced branching patterns over time. The divergence in branching across states that emerged in the 1930s did not begin to close until the interstate deregulations in the 1970s, with full convergence not occurring until the early 2000s. Indeed, the states that adopted branching by 1940 remained the most branching-heavy places in all

subsequent decades.

Figure 2: Share of banking offices in branch networks



(a) 1940 (b) 1970

Notes: Shading refers to year-specific quintiles in the share of banking offices in a branch network in that state. Sources: FDIC BankFind, and authors' calculations.

In the next part of the paper, we examine the impact of this first wave of deregulation on both financial access and real economic outcomes. This era's regulatory framework provides key advantages for our analysis. States typically permitted branching only under specific conditions, often tied to cities' populations, banks' minimum capital requirements, or the loss of local banking services during the financial crisis. These constraints resulted in

We begin by comparing outcomes across states, and we find that early adopters of branch banking experience substantially different patterns of financial development that persisted for decades. These differences in financial development between early and late adopters remained large through the interstate banking deregulation of the 1970s and 1980s, illustrating how Depression-era branching policies shaped economic and financial development well into the modern era.

In order to provide causal estimates of these effects, we then turn to a county border pair differences-in-differences empirical design that compares the evolution of county outcomes before and after deregulation. Comparing adjacent counties on opposite sides of state borders allows us to account for unobserved shocks that may impact a small geographic area, and therefore to tighten our variation to identify the effects of branching deregulation. Crucially, this approach also absorbs nationwide financial changes so we can isolate the effects of *local* access to branch networks. In our event studies starting in the 1920s, we find that counties in deregulating states experience more rapid financial recovery, as measured by deposits per capita in the

1930s, which persists until the 2000s.

Later waves of financial development erased did not lead to total convergence between locations, especially among places which were poorer before the Great Depression. Stratifying our county border pair estimates by pre-Depression deposit bases, we find that less-developed areas which gained access to bank branching in the 1930s remain more financially developed today. Our analysis of manufacturing and agricultural outcomes indicates that branching facilitated financial deepening and subsequent structural change, with the largest impacts in previously under-served areas. Thus initial financial development created decades of higher growth, which did not disappear once national financial markets became more integrated.

Building on these local differences in finance-led economic development, we next provide evidence that branching (reduced) improved capital (mis)allocation across markets. While direct measurement of capital allocation efficiency using firm-level data is not possible for this period, our evidence indicates that branch networks reduced financial frictions, enabling firms with high marginal revenue product of capital to pursue profitable investments. This improvement in capital allocation is evident in the convergence of manufacturing activity within states that deregulated. States that introduced bank branching exhibited more uniform distributions of manufacturing establishments immediately after deregulation compared to other states. Furthermore, within these branching states, counties that had lower productivity and output in 1929 grew faster along these dimensions from 1929 to 1939 than either other locations in the same state or counties in unit banking states. This convergence of less-developed areas toward more productive regions within the same state suggests that branching deregulation helped equalize the cost of capital across local markets.

Finally, we provide direct evidence that these real economic effects stem from the enhanced capital mobility within branch networks. Using novel data on 1930s banking office-level balance sheets spanning all Federal Reserve member banks, we document systematic differences in how branch networks mobilize and utilize capital compared to unit banks. Branch offices more actively redistribute deposits to other locations than similarly sized unit banks, demonstrating greater capital mobility within these networks. Moreover, the branch offices receiving these deposit inflows are systematically smaller than unit banks that receive capital from other banks, suggesting that internal capital markets facilitate a more efficient allocation of resources. Most importantly, branch offices engage in more effective financial intermediation: after receiving capital flows, they consistently convert these resources into loans. In contrast, similarly sized unit banks not only receive less capital but also generate fewer loans when they do receive funds. Internal capital markets appear to redirect funds within branch networks to make loans in ways not replicated by correspondent bank networks, so increasing banks' geographic coverage can create more financial intermediation and therefore economic growth.

Related literature:

We relate first to the literature on the finance-growth nexus. Financial development has long been considered a key determinant of economic growth (Gerschenkron, 1962; Goldsmith, 1969). However, time series evidence casts doubt on the stability of this relationship, raising questions about how the financial sector can accelerate both economic stability and development (Loayza and Ranciere, 2006; Rousseau and Wachtel, 2011; Arcand, Berkes, and Panizza, 2015). This ambiguity is particularly evident in the United States: despite experiencing substantial economic growth in the post-war period, the U.S. has rarely been viewed as an example of finance-led development because its banking sector remained relatively fragmented compared to other advanced economies (King and Levine, 1993).

Motivated by these questions around the finance-growth nexus, a substantial literature examines the real and financial impacts of the bank deregulation that began in the 1970s. Upon branch legalization, states' income, lending, and industrial concentration all increased (Jayaratne and Strahan, 1996; Cetorelli and Strahan, 2006). These state-level changes have since improved bank efficiency, increased cross-location liquidity transfers, and reallocated firm capital at shorter horizons (Berger, Demsetz, and Strahan, 1999; Gilje, Loutskina, and Strahan, 2016; Bai, Carvalho, and Phillips, 2018). For households, access to bank branches also raises financial inclusion and wealth accumulation, which also improves labor market outcomes (Célerier and Matray, 2019; Fonseca and Matray, 2022). Our analysis of the first wave of branching deregulation shows that these benefits of local expansion emerged much earlier and continued into the current day, suggesting that national financial development did not eradicate early advantages in local banking growth

Our historical setting allows us to isolate the specific mechanism through which branching affects development. We build a new legal database detailing the *types* of state *branch* regulations enacted in the *aftermath* of the Great Depression, complementing earlier work on other pre-Depression legal regimes (e.g. Mitchener (2007); Dehejia and Lleras-Muney (2007); Wheelock et al. (2008); Anderson, Barth, and Choi (2019); Aldunate et al. (2021)) and binary measures of branch deregulation through 1933 (Economides, Hubbard, and Palia, 1996; Abrams and Settle, 1993; Dehejia and Lleras-Muney, 2007). We leverage these data to demonstrate that lowering financial frictions through branching — without changes in bank scale — contributed significantly to structural transformation (Rajan and Zingales, 1998; Levine and Zervos, 1998; Quincy, 2024). This complements work on other banking reforms, which find mixed effects of bank size on competition and real outcomes (Carlson, Correia, and Luck, 2022; Goetz, Laeven, and Levine, 2016; Jayaratne and Strahan, 1996; Mian, Sufi, and Verner, 2020). In contrast, we show branching alone improved capital allocation, establishing this reform as another driver of U.S. economic development alongside other markers of capital market integration (Rousseau and Sylla, 2005; Hornbeck and Rotemberg, 2019; Xu and Yang, 2024; d'Amico and Alekseev, 2024).

Finally, we contribute to the literature on the Great Depression's long-run impact. While prior work has emphasized how banking sector disruptions deepened the crisis (Bernanke, 1983), we show that the regulatory response to these failures - specifically, the liberalization of branching restrictions — had positive effects on financial development that persisted for decades. This perspective complements other studies that have highlighted various channels of recovery, such as the money supply (Friedman and Schwartz, 1963), exchange rate depreciation (Romer, 1992; Hausman, Wieland, and Rhode, 2019), and New Deal programs (Fishback, 2017; Cole and Ohanian, 2004). Our findings suggest that crisis-induced financial innovation can have lasting beneficial effects, even as the initial disruptions impose significant economic costs.

2 Historical background

2.1 Branch bank regulation before 1933

The United States arrived late to bank branching. After the Civil War, state and national bank regulators largely prohibited banks from opening multiple offices, in contrast to other advanced economies that saw rapid consolidation of their banking sectors in the 19th century (Chapman and Westerfield, 1942).[1] Between the 1860s and 1920s, regulators repeatedly lowered charter capital requirements to permit ever-smaller banks to enter the market, which made small, independent banks the dominant arbiters of credit access in most of the nation (Chapman, 1934).

The potential benefit of having larger, more diversified bank branch networks were seriously discussed for the first time following the widespread bank failures after WWI. As agricultural prices plunged, rural areas lost both income and credit access (Jaremski and Wheelock, 2020; Rajan and Ramcharan, 2016). Small towns' diminishing access to credit became a rallying cry for academic economists and bankers in favor of branch legalization.[2] Ultimately, unit bankers won the day, as Congress passed the McFadden Act in 1927, which effectively capped bank branch expansion.

2.2 The Glass-Steagall Act of 1933

After 1929, banking instability intensified, renewing debates about how best to provide widespread, safe access to credit. Congress focused on two main issues: a loss of public confidence in bank solvency and high rates of bank failure, especially among smaller banks. The House passed bills legalizing deposit insurance,

[1] The dual charter banking system did not offer prospective banks significant variation in bank branching permissions, unlike in the case of minimum charter capital, as branching was largely *de facto* prohibited by state and national regulators in the National Banking Era even in the absence of outright abolition (Chapman, 1934; White, 1983).

[2] See, for instance, Southworth (1926) or Collins (1926) in the 1920s or Cartinhour (1931) and Southworth, Chapman et al. (1941) in the 1930s for academic opinions. Chapman (1934) describes debates at the American Bankers Association during the 1920s and 1930s over whether to endorse branching.

reasoning that federal guarantees would stop bank run-based failures and permit banks to begin lending again (Burns, 1965). The Senate, in contrast, favored legalizing cross-city bank branching, in order to allow large banks to restore banking services in rural areas (Chapman, 1934). Although neither of these bills made it through the other house before the height of the banking crisis in early 1933, they became the basis for the Banking Act of 1933, more commonly called the Glass-Steagall Act.

The Glass-Steagall Act was an omnibus of new financial regulation intended to create long-run stability after the banking holiday in March 1933. Tightening bank liability requirements and separating investment and commercial banking were seemingly self-evident solutions to several drivers of the crisis (73rd Congress, 1933a,b).[3] Legislators then debated how to address the most pressing challenge facing communities across the country—the widespread loss of banking services—with deposit insurance and bank branching emerging as the two primary solutions that might restore access without undermining banking market health and stability.

The pro-branching camp, led by Virginia Democrat Carter Glass, argued that cross-city branching would allow large, well-run urban banks to serve towns too small to sustain their own (safe) banks. They pointed to the Depression as evidence that small banks were most vulnerable to failure, leaving rural areas without adequate banking services. One senator reluctantly embraced bank branching because the "stockholder reserve [was] relatively dry" and depositors were convinced unit banks were unsafe in towns where local investors had been wiped out by previous bank failures (72nd Congress, 1933)[4] He argued that allowing big-city centered branch networks to expand was the only feasible way to restore banking services after a decade and a half of bank failures. This argument failed to sway many congressmen, who believed branching would concentrate funds in the hands of the wealthy urban elites (73rd Congress, 1933a; 72nd Congress, 1933; 73rd Congress, 1933b). They worried that, rather than restoring services, urban banks might drain deposits from rural areas without reinvesting locally, as was occurring in Canada at the time.

Deposit insurance emerged as the more appealing solution for legislators who attributed the crisis to large banks, with Alabama Representative Henry Steagall leading this camp. Supporters argued that protecting depositors from losses caused by banker misconduct was a matter of fairness, while opponents highlighted the moral hazard that such protection would create (Flood, 1991). For these legislators, deposit insurance was a pragmatic solution that would protect depositors and stimulate bank entry while limiting the political and geographical concentration of financial power in large, multi-branch institutions.

[3]Later investigations on the separation of commercial and investment banking found the provision to be more controversial (Kroszner and Rajan, 1997; White, 1986; Benston, 1989; Ramirez, 1999).

[4]The phrase refers to the depletion of local investment capital in small towns. The local investors who would normally provide equity capital to establish new banks had lost substantial portions of their wealth after successive waves of bank failures. Indeed, many failed banks could not recover the extended liability claims (double liability was common during this era) from their capital investors. Consequently, these potential investors were unwilling or unable to invest in establishing replacement banks.

Months of debate failed to resolve this impasse, but Congress faced a firm deadline at the end of the legislative session in June 1933. Carter Glass, unable to sway the populist wing of his Democratic majority to support branching, was forced to broker a compromise.[5]

The resulting compromise established deposit insurance nationwide while delegating the most contentious issue—bank branching—to the states. This decision had lasting consequences: from 1933 until the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, state law governed branching permissions for all banks operating in their boundaries, regardless of charter type. See Figure B.3 for the relevant excerpt of the Glass-Steagall Act.

2.3 State branch regulation in the 1930s

After the passage of Glass-Steagall in June 1933 delegated branch banking restrictions to the states, comparable debates on the merits of branch banking occurred in state legislatures. As Cartinhour (1934) reports, almost every state legislature considered updates to their branch banking law between 1933 and 1934, regardless of party affiliation.[6]

This period marked an unprecedented wave of regulatory change, as states were left with the authority to rebuild their financial infrastructure. Unlike the post-1970s branch deregulation, 1930s legislatures debated legalizing bank branching within frameworks that maintained significant constraints on branch location and bank size. State lawmakers engaged in nuanced debates about how to restore banking services without alienating constituents who harbored deep skepticism toward large-scale finance, resulting in a wide spectrum of regulatory approaches across states.[7] In Alabama in 1933, for instance, the Senate passed a bill legalizing statewide branching subject to a minimum capital and population requirement, but eight different representatives proposed alternatives in the House (Senate, 1933).[8] Across states, each of the observed legal barriers to entry is likely the culmination of negotiations between pro- and anti-branching factions about how to best restore banking services.

Following the 1930s regulatory changes, branch banking laws remained largely stable for decades. Regulators pivoted from geographic expansion to focus on bank safety and other supervisory concerns, leaving

[5]Two of the fiercest anti-branching advocates were Louisiana Democratic Senator Huey Long and Alabama Democratic Representative Henry B. Steagall, so neither region nor party are sufficient enough to characterize support for this policy.

[6]For instance, a coalition of Oregon Democrats joined the Republican majority to legalize statewide bank branching in 1933 over the objections of Republicans.

[7]In contrast to earlier crises, most regulators increased, not lowered, minimum capital requirements for unit banks as well. The Glass Steagall Act raised paid-in capital thresholds for national and state member banks and many state legislatures followed suit. Figure A.5d plots the number of states raising versus lowering charter capital requirements for each year from 1930 to 1940 relative to their 1929 levels.

[8]Some, but not all, of these suggested branch entry conditions made it into the successful 1935 bill. Branching was not legalized in Alabama till 1935, with higher population and capital minima than in 1933 but without the banklessness and sufficient business language (Senate, 1935). In contrast, Mississippi legalized branching in 1934 based on town (not county) populations and minimum charter capital requirement one-tenth that of Alabama's.

the established geographic restrictions mostly untouched until technological innovations in the 1970s created new pressures for reform (Robertson, 1968; Kroszner and Strahan, 2014).

3 Data and empirical strategy

3.1 Data

We integrate several newly created datasets with existing records on financial development and economic activity. We use three main types of data: (1) state-level laws governing bank branch regulations; (2) banking sector outcomes including bank branch-level balance sheets; and (3) real economic outcomes.

3.1.1 Bank branch regulations over time

We present a comprehensive regulatory database of bank branching laws from 1910 to 1970, which spans the National Banking Era through the modern second wave of bank deregulation. This collection documents the intricate and often interlocking conditions governing bank branching established by each state legislature on the journey from total prohibition to unrestricted *de novo* branching. Our long-term approach captures branch expansions occurring before total liberalization, which were sizeable. Just six states had fewer than half of their banking offices in branches the year before their final deregulation date, the stage captured in prior studies, summarized in Kroszner and Strahan (2014). However, we note that earlier branch deregulation came with a host of potential restrictions. Figure B.2 illustrates this complexity with Mississippi's legislation, which imposed both bank and branch-specific minimum capital requirements, geographic radius limitations, and maximum branch counts, among other provisions. Our repository categorizes each state's branching regulations along four dimensions:

1. Geographic: Limitations on where banks could establish branches (e.g., within-city, cross-city, statewide)
2. Competition: Restrictions based on existing banking presence and local market conditions
3. Population: Thresholds based on community size that determined branching eligibility
4. Capital: Requirements including both minimum bank capital necessary to operate any branches and additional capital required for each new branch location

The database also includes related regulatory frameworks from this period, including minimum capital requirements and non-bank chain taxation. Further detail can be found in Appendix B.

3.1.2 Banking data

We link the legal database to banking sector outcomes by combining several complementary data sources.

Bank Market Structure. We use two main sources to capture the extent of unit and branch banking. We capture pre-1935 annual state-level banking market structure using data digitized by Flood (1991) from Federal Reserve publications. After 1935, we use FDIC's BankFind database to observe both the number of banks and the number of banking offices.

Local Financial Development. We capture financial development with county-level deposits (e.g., Fonseca and Matray, 2022) from 1920 to the present. In the pre-deregulation period, we use the FDIC Banking Changes dataset from ICPSR, which records deposits at bank headquarters. For the post-1940s period, we use the City and County Databooks, which correctly measure deposits by banking office location. We extend this series forward using the FDIC Summary of Deposits dataset after 1992.

Bank Branch-Level Balance Sheets. We hand-collect a unique dataset of establishment-level balance sheets for all Federal reserve member banks in 1937. These data separately record detailed assets and liabilities for each banking office, including their deposits raised and use of both internal and external capital markets. We provide more detail on these data in Appendix C.

3.1.3 Economic outcomes

We construct a panel spanning from 1920 to the 1990s of county-level economic activity that captures both establishment counts and output measures across multiple sectors. Our primary source is the collection of decennial census data, supplemented with county data books, which provide manufacturing, retail, and agricultural statistics. We complement this panel with additional interwar manufacturing data (Janas, 2024-07-01; Fishback and Kantor, 2018-11-18). We construct per-capita measures by scaling outcomes using linearly interpolated population data between census years.

3.2 Empirical strategy

In order to establish a causal relationship between branch deregulation and economic outcomes, we employ a county-border discontinuity design. This approach allows us to compare adjacent counties that share a state border but were subject to different regulatory regimes—one permitting branching after 1930s deregulation and one maintaining unit banking restrictions.

We estimate the following regression specification:

$$y_{cpt} = \beta_t \mathbb{I}(\text{1st Wave})_c + \alpha_c + \gamma_{pt} + \varepsilon_{cpt} \tag{1}$$

Our dependent variable y_{cpt} represents outcome variables for county c in border-pair p at time t, including financial development measures (deposits per capita) and real economic outcomes (manufacturing value-added and farms per capita). The treatment variable $\mathbb{I}(\text{1st Wave})_c$ is an indicator that county c is located in a state that deregulated branch banking by 1939. We include county fixed effects α_c to remove time-invariant county-level differences and border-pair by time fixed effects γ_{pt} to remove shared time-varying border-pair shocks that might affect counties on both sides of a state border. These county-pair fixed effects restrict the identifying variation to within this well-defined geographic area, thereby creating control and treated counties that are more likely to be similar.

The identifying assumption is the classic parallel trends premise that there is no unobserved concurrent shock to the deregulating county within the average pair, which would have impacted their outcomes afterward. This approach offers two key advantages: it does not require randomness in the counties that deregulated due to the unit fixed effect, nor does it require randomness in the timing of deregulation because of the year fixed effects.

This county-border analysis complements our state-level findings by showing that otherwise very similar locations experienced markedly different post-Depression economic and financial trajectories based solely on their state's regulatory choices. We drop all states which allowed cross-city branching before the 1930s and zoom in on state borders where branching became legal on one side but remained illegal through 1939 on the other.[9]

The approach is similar in spirit to research identifying the employment effects of minimum wage laws across state borders. While there was some possibility that customers could cross county or state lines to use banks across borders, historical evidence suggests banking markets remained highly localized during this period, with both deposit-taking and lending activities typically confined to narrow geographic areas.[10]

4 New stylized facts on branch deregulation

Our regulatory database provides four insights about the first wave of bank branch deregulation that challenge conventional understanding of American banking history. First, we document a concentrated burst of deregulation during the 1930s that created a regulatory framework that persisted largely unchanged until the 1970s. Second, this deregulation was conditional rather than absolute: states permitted geographic expansion but simultaneously imposed complex, interlocking restrictions on capital, competition, and population that fundamentally differentiated it from the second interstate deregulation wave. Third, the spatial pattern

[9] See Figure A.4 for a map of the included counties.

[10] For instance, loan applications required bankers report on potential borrowers' reputations and the "character" of their neighborhood (see Fogire A.14). Regulators similarly defined deposit markets as neighborhood- or city- level (Delano, 1945). Even in the 21st century, customers rarely travel far to find banking services (Brevoort and Hannan, 2006, e.g.).

of these regulatory changes created substantial geographic heterogeneity that was uncorrelated with pre-existing economic conditions yet produced long-run differences in banking structure across states. Finally, these conditional regulations resulted in branch and unit banks maintaining remarkably similar business models during this era, in contrast to the significant operational divergence that emerged after modern deregulation. Together, this set of results shows that the first deregulation wave was a distinct regulatory approach that shaped American banking for generations.

4.1 Timing and persistence of branching deregulation

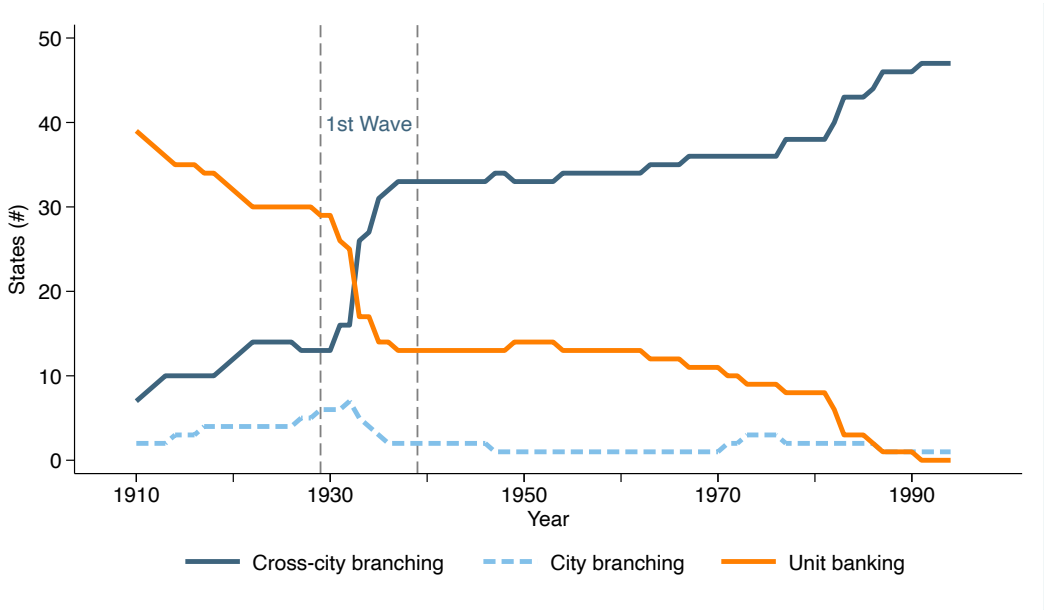
Bank branching regulations in the United States primarily restricted geographic expansion through three regulatory regimes: unit banking (no branching permitted), city-limited branching (branches confined to a single city), and cross-city branching (branches allowed to operate across multiple cities within permitted areas). While all three systems coexisted throughout the twentieth century, our analysis of primary legislative texts reveals that their relative prevalence shifted dramatically during the 1930s with two clear-cut waves of deregulation separated by decades of regulatory consistency.

Figure 3 plots the number of states using each type of geographic restriction over time, revealing a concentrated wave of deregulation during the Great Depression. The first wave, concentrated in the 1930s, shifted the system from predominantly unit banking to one where cross-city branching became the norm. Between 1929 and 1939, the number of states not allowing any form of bank branching fell from 29 to 13 while the number permitting statewide branching rose from 9 to 19 (Counsel of the Board of Governors, 1930, 1939). Most dramatically, the number of states prohibiting branching halved from 1931 to 1935, with cross-city branching becoming the dominant regulatory framework, rising to almost 70 percent of states by 1936 from just 30 percent in 1930.

This 1930s wave was exceptionally rapid and far-reaching: no other period between 1910 and 1990 experienced comparable regulatory change. Furthermore, after this burst of deregulation, the distribution of branching regulations remained remarkably consistent for nearly four decades, as evidenced by the effectively flat cross-city branching line from roughly 1935 to 1970 in Figure 3, demonstrating the persistence of these Depression-era regulatory choices.

The second wave of deregulation, which is visible in Figure 3 as the increasing number of states allowing cross-city branching beginning in the 1970s, gradually eliminated the remaining unit banking restrictions. This second wave eventually culminated in nationwide banking through the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994. During this latter period, banking networks grew significantly in size as the regulatory approach focused on interstate competition rather than just branching within states.

Figure 3: Geographic bank branching restrictions by state



Notes: Prior to 1927, national banks could not branch. Starting in 1927, these laws apply to all banks in a state. Unit banking refers to all states either implicitly (though a lack of law granting permission) or explicitly prohibiting bank branching. Cross-city refers to all potential geographic configurations larger than a city-only network. Sources: State session laws and authors' calculations.

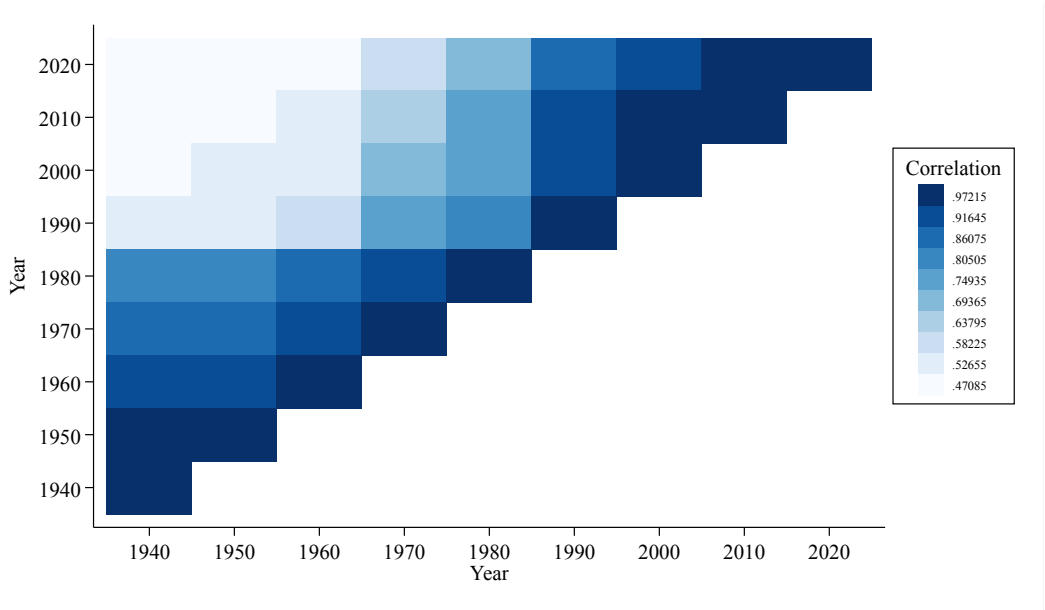
Given the persistence of the regulatory regime, we also find that they shape the banking landscape for generations. As shown in Figure 2, states that emerged from the first deregulation wave with high proportions of branch offices in 1940 still had the highest shares of branch offices three decades later.

To quantify this path dependence more precisely, Figure 4 presents a correlation matrix of branching distribution across states from 1940 through 2020. The strong blue diagonal band extending from 1940 demonstrates the extraordinary durability of these early branching patterns. States' branching shares in 1940 maintained correlations exceeding 0.5 with their branching shares a half-century later. Perhaps most remarkably, even in 2020—after the second wave of deregulation, interstate banking through Riegle-Neal, multiple financial crises, and technological transformation—the correlation with 1940 branching patterns remains at 0.48 and statistically significant.The geographic footprint of banking established in the 1930s has proven remarkably durable, creating institutional path dependencies which linger today.

4.2 Conditional deregulation and regulatory complexity

While the 1930s saw a dramatic expansion in states permitting bank branching, this deregulation came with important qualifications. Rather than creating an unrestricted branching environment, states implemented complex regulatory frameworks with multiple, interlocking conditions that governed where and how banks

Figure 4: Pairwise correlations in states' branch office share over time



Sources: FDIC, and authors' calculations. Each square is a correlation between states' branch office share quintile in the years corresponding to the row and column. All correlations are statistically significant.

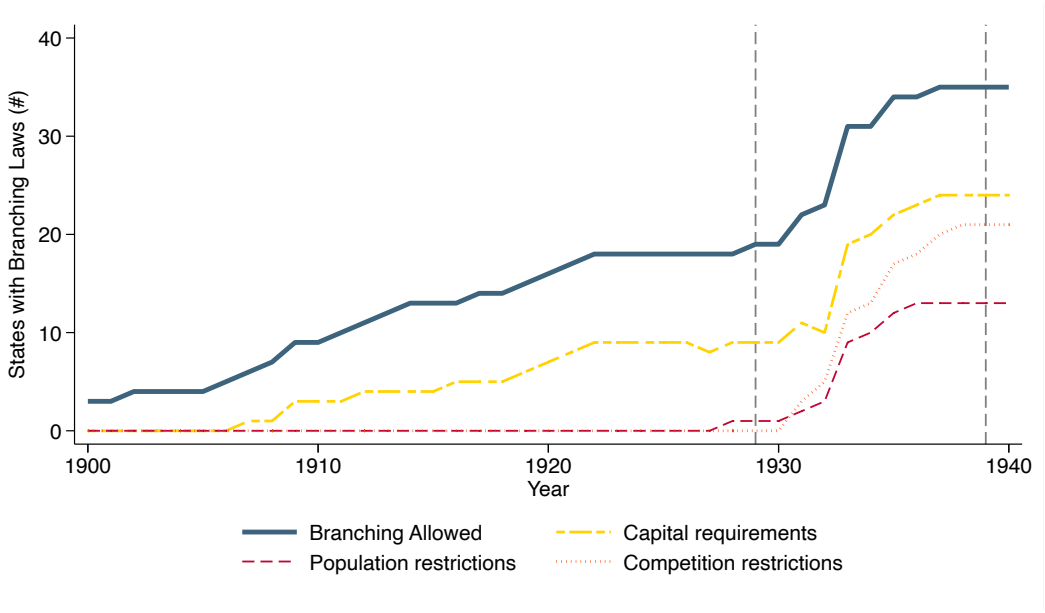
could establish branches.

Figure 5 shows this pattern: as more states permitted branching during the 1930s, they simultaneously imposed new types of restrictions. The solid blue line shows the steady increase in states allowing branching in some form, but the other lines demonstrate how this permission came with significant constraints. Capital requirements (dashed yellow line) remained the most common additional restriction, while competition-based rules (dotted red line) and population restrictions (dashed red line), both virtually non-existent before 1930, grew significantly during the Depression era.

These newly implemented restrictions served specific policy goals. Competition-based regulations, which became much more widespread by 1940, often permitted branching only in towns without existing banking services or required unanimous consent from incumbent banks. For instance, Idaho's 1935 banking act allowed branches only if they merged with an existing bank, received approval from local bankers, or served previously unbanked towns (Counsel of the Board of Governors, 1936). These provisions aimed to prevent large banks from displacing rural institutions while still expanding banking to underserved areas.

Population-based restrictions further controlled branch expansion by either setting minimum population thresholds (protecting small-town banking) or maximum thresholds (preserving local banking in larger cities). These restrictions operated in tandem with differential capital requirements, which typically demanded substantial additional capital for branch operations beyond what was required for a single-office bank.

Figure 5: Local bank branching restrictions by state



Notes: Prior to 1927, national banks could not branch. Starting in 1927, these laws apply to all banks in a state. Population requirements could be at city or county level. Capital requirements were minima applied at either the intensive (per-branch) or extensive (prior to first branch) margins. Competition restrictions include all rules based on the number of incumbent banking offices present in a geographic area or limits on the total number of offices in a network. Sources: State session laws and authors' calculations.

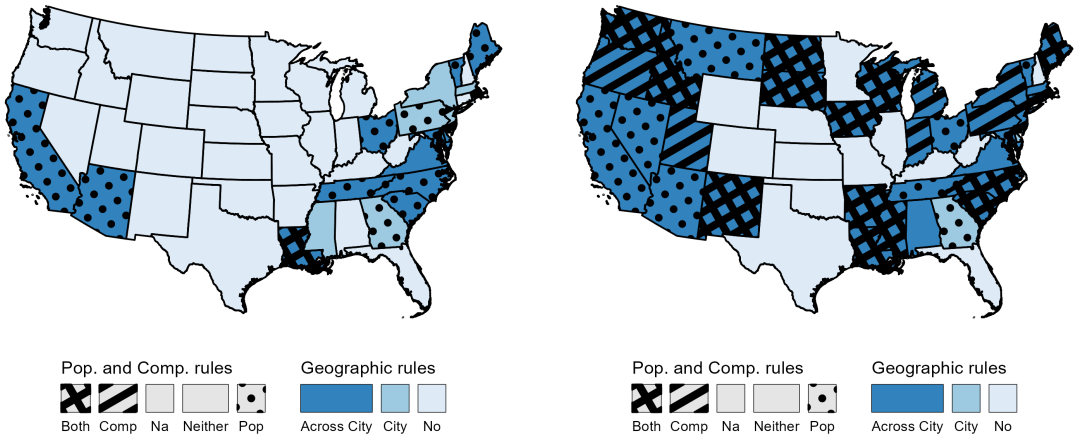
By 1940, branching was technically legal in most states but remained practically constrained by an interconnected web of geographic limits, capital requirements, competition provisions, and population thresholds that guided where branches could open and which banks could operate them. The resulting regulatory framework fundamentally differed from the permissive environment following the 1970s deregulation wave. The tiered system of deregulation during the first wave favored larger, well-capitalized urban institutions while specifically channeling their expansion toward underserved areas and protecting established banking markets—reflecting policymakers' intentions to improve banking access in the wake of widespread bank failures without creating the large-scale branch networks characteristic of modern banking. This pattern of conditional deregulation reveals that the binary classification of states as either "allowing" or "prohibiting" branching obscures the complex regulatory environment of the period.

4.3 Spatial patterns of deregulation

Having discussed the timing and nature of deregulation, we now turn to showing the geographic distribution of these changes. Figure 6 maps the regulatory changes that occurred over this decade.

In 1929, as shown in panel (a), branching was primarily restricted to specific regions—predominantly parts of the Northeast and the South—while most of the country maintained unit banking systems. Cross-

Figure 6: Branch bank restrictions, 1929 and 1939



(a) 1929 (b) 1939

Notes: The depth of the color refers to states' geographic permissions. The different levels of geographic restrictions are overlaid with shading for population and competition requirements. Sources: State session laws and authors' calculations.

city branching (dark blue) was permitted in just a handful of states, primarily along the West Coast and in scattered eastern states. Population-based restrictions (dotted pattern) appeared in several states, but competition-based rules were nearly nonexistent. However, by 1939, cross-city branching had spread across most of the country, with notable exceptions concentrated in the Great Plains states, which largely maintained their unit banking traditions.

States' choice of branching regimes varied even between neighboring states. The South, for instance, displayed six different regulatory configurations in 1939, suggesting that state-specific factors rather than broad regional trends drove regulatory choices. Nor can these regulatory patterns cannot be explained by pre-existing economic trends. Our analysis of state-level financial development indicators throughout the 1920s (Figure A.2) shows no significant correlation with subsequent deregulation decisions. This within-region variation appears across the country, challenging simplistic regional explanations for banking policy differences. Moreover this patchwork of banking regulations lasted for decades, creating markedly different institutional environments between otherwise similar states.

4.4 Bank structure and operations

The complex regulatory environment of the 1930s branching deregulation produced a banking system fundamentally different from what emerged after the second wave of deregulation. Figure 7 provides evidence of this distinction by comparing the balance sheet characteristics of unit and branch banks across two eras: during the first deregulation wave (1937) and following the modern deregulation period (2000).[11]

The 1937 data in panel (a) show that despite operating under different organizational structures, branch and unit banks maintained nearly identical business models. While the average establishment size of branch banks are larger than unit banks, on every other dimension of measures of banks' business including share of lending, real estate exposure, interbank activity, deposit-funding share, and capital-funding share, we find that branch and unit banks are statistically similar. This similarity remains even after controlling for bank charter type and geographic location.

By contrast, panel (b) shows the dramatic divergence that emerged by 2000. Modern branch banks are actually smaller in average establishment size. In addition, they are significantly different in terms of their business model, maintaining substantially higher loan-to-asset ratios, holding significantly less cash, and relying more heavily on deposit funding. These differences remain robust across multiple specifications controlling for bank type and headquarters location.

This comparison illustrates a critical aspect of the first deregulation wave: while it permitted geographic expansion, the conditional nature of the regulatory framework ensured that branching did not fundamentally alter banks' business models. The similar balance sheet compositions suggest that 1930s branch and unit banks operated as functional equivalents despite their different structures, which was a stark contrast to the specialized and differentiated institutions that emerged after later deregulation.

This pattern also aligns with our understanding of Depression-era regulatory intent. Policymakers sought to expand banking access while preventing the emergence of large, specialized branch networks that might displace local institutions. The evidence indicates that they appear to have succeeded: branch banks expanded geographically but maintained operational profiles similar to their unit banking counterparts, with any advantages likely stemming from network access rather than fundamental business model differences such as scale and scope.

[11] We thank Stephan Luck for facilitating access to the 2000 branch indicator data, collected for Correia, Luck, and Verner (2024).

Figure 7: Single- and Multi-Establishment Banks' Balance Sheets



(a) 1937

(b) 2000

Notes: Each point is a regression of a standardized balance sheet ratio on a unit bank indicator, adding controls for bank charter type or charter type-headquarters location dyad. 90 and 95% confidence intervals using robust standard errors included. Sources: Federal reserve call reports: 1937 Federal Reserve Board (1937), 2000: Correia, Luck, and Verner (2024).

5 Real effects of deregulation

5.1 Financial development

5.1.1 Banking establishments

We first examine how the first wave of branching deregulation affected financial development over the long run. We begin with a state-level analysis where we use a dataset combining state branching regulations from our database with banking statistics from FDIC and Flood (1991) spanning from the 1920s to the 2010s.

We estimate the correlation between 1939 branch regulations and banking market outcomes using the following specification:

$$Ln\ BANK_{s,t} - Ln\ BANK_{s,1935} = \beta_0 + \gamma_r BRANCH\ CONDITIONS_{s,1939} + \beta_c + \epsilon_{st} \tag{2}$$

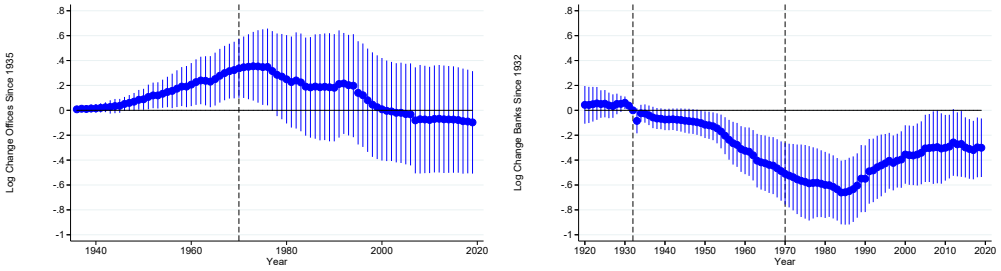
where $BANK_{s,t}$ measures the number of banks or banking establishments in state s in year t. The indicator variable $BRANCH\ CONDITIONS_{c,1939}$ captures branching permissions as of 1939, and β_c is a census region fixed effect.

Figure 8 presents the results from these rolling regressions. Panel (a) shows that states permitting branching by 1939 experienced significantly stronger growth in banking offices relative to their 1935 levels, with the gap peaking at approximately 40 percentage points in the late 1970s before narrowing after the second wave of deregulation began.

This increase in banking establishments is not driven by growth in the number of banks. In fact, panel

(b) shows that states that permitted branching experienced significantly fewer banks overall compared to unit banking states. After tracking similarly through the 1920s, the number of banks in branching-permissive states declined sharply relative to unit banking states. These results show that the financial development arising from heightened banking office growth.

Figure 8: State Branch Deregulation and Long-Run Banking Development



(a) Banking Offices (b) Banks

Notes: Each point is the result of a separate regression of the log change in the outcome relative to 1935 on 1939 branch legality, controlling for census region fixed effects. Sources: State session laws, FDIC, Flood (1991), and authors' calculations.

Several additional pieces of evidence suggest that branch expansion, not other trends in bank concentration (e.g. Fohlin and Jaremski (2020)) drive these results. First, we see no evidence of differential banking growth before deregulation in Figure 8b. Second, we split our branching categories by the geographic expansion permitted in Figure A.3 and show the looser the geographic restrictions on branching, the more developed the financial sector. Again these results are driven by branches, not unit bank expansion. Third, we demonstrate that these trends began in the 1930s by narrowing our definition of treatment to those states deregulating in the 1930s (see Figure A.6 for this result). Despite the attached legal hurdles, 1930s deregulation wave facilitated long-run financial development by increasing bank branching.

5.1.2 Deposits

Next, we confirm that the 1930s Great Depression deregulation wave had long-running effects using a county border pair design. This complements the state-level analysis by showing that otherwise very similar locations experienced markedly different post-Depression economic and financial trajectories based on whether or not their state permitted branching during the 1930s (or much later). In this case, we drop out all states which allowed cross-city branching before the 1930s and zoom in on state borders where branching became legal on one side of the border and remained illegal through 1939 on the other.[12] This exercise is similar in spirit to exercises identifying the employment effects of minimum wage laws, for instance. We estimate the effect

[12]See Figure A.4 for a map of the included counties.

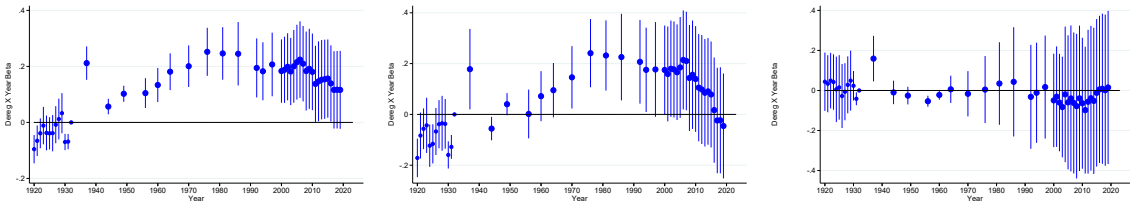
of deregulation on an outcome Y in an event study framework including each county c in a border-pair p and state s in every year t:

$$Y_{c,p,t} = \gamma_c + \gamma_{p,t} + \Sigma_{\tau=1920}^{1992} \beta_\tau DEREG_s \times 1(t = \tau) + X_{s,t} + \epsilon_{pt} \tag{3}$$

The β coefficients represent the time-varying correlation between state-level differences in deregulation and counties' outcomes conditional on fixed effects for each county and county border pair-year dyad. The identifying assumption is that there is no unobserved shock to counties that deregulate during the period of deregulation, conditional on controls. Interpreting these coefficients as the partial equilibrium effect of deregulation also requires that the unit banking side of the border is not affected by the deregulation across state lines. Though there was some chance that customers could cross county or state lines to use other banks, distance deterred such behavior in the past, as it still does today (e.g. Agarwal and Hauswald, 2010).[13]

Following the minimum wage literature, we two-way cluster our standard errors at the border pair and decade levels.

Figure 9: Branch deregulation's effects on log deposits



(a) Log deposits (b) Below 1929 median (c) Above 1929 median

Notes: Only counties in a border pair with a discontinuity in branching included. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the border pair and decade level. We use 1932 as the omitted year because it is the year before Glass-Steagall. Deposits are for all commercial banking offices in that county in that year, except 1937, which is for only Federal Reserve member banks. We also control for the log number of banks in each state in each year and control for border pair-year dyad and county fixed effects. Observations are truncated at the 1 percent level in each year. Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations.

Figure 9 presents evidence that the 1930s bank branching deregulation improved financial outcomes compared to bordering unit banking-only locations. Figure 9a shows that counties in deregulating states experienced markedly higher deposit growth than their neighboring non-deregulating county only after 1932. Once deregulation began, a sizeable gap opens between newly branched counties and their unit banked counterparts. We note, however, that the 1937 datapoint includes only Federal Reserve member banks, so

[13]Bank regulators' notes on charter approvals in the 1940s, for instance, defined deposit access at the neighborhood or city-level, even in rural areas (Delano, 1945). Loans were even more localized, as loan applications asked the officer to reflect on how long they had known the applicant and the character of the applicant's neighborhood, see Figure A.14 for an example. Even when nearby banks advertised lower rates, credit markets often remained highly localized well after the end of World War II (Schweiger and McGee, 1961).

we hesitate to interpret the size of this effect relative to other years. After 1940, estimates are for all FDIC insured banking offices in each county. These deposit gaps remain statistically significant until the 2010s. As in the state-level regressions, bank branching accelerated financial development at the county level.

Next, we examine whether these gains varied by counties' pre-Depression financial development. When we separate our sample at the 1929 median, we see that the branch deregulation effect is no longer persistent for counties with higher than average pre-Depression deposits in Figure 9c. If anything, branching improved local deposits only in the 1930s for more-developed areas compared to unit banking neighbor counties also above the median. Instead, Figure 9b reveals that branch deregulation spurred local deposit growth over the rest of the 20th century in counties below the median compared to similarly un-developed counties without branch banking across the border. In unreported results, we show these results are robust to adding controls for county-level World War II spending or saving, as well as all other forms of 1930s state banking legislation, suggesting the 1930s branching legal change is the shock that drives the divergence between otherwise comparable places.[14] The estimation approach does not drive the results either. When expanding our sample to include all counties in 1930s deregulating and unit banking-only states in a two-way fixed effect model, as in Figure A.13, branching again induces deposit growth in the long run, especially in less-developed places. In the wake of the nation's most severe financial contraction, passing branching laws translated to a faster banking recovery which lasted for decades, especially in places with smaller banking sectors beforehand.

5.2 Economic development

Having established that this wave of branching increased financial development, we turn next to economic outcomes using the same estimation strategy as in Section 5.1.2. We focus on two main outcomes: manufacturing value-added, which captures the difference between establishments' input costs and total output, and the number of farms in a county. In each case, we scale by population to measure the intensity of each sector's production relative to the labor force.

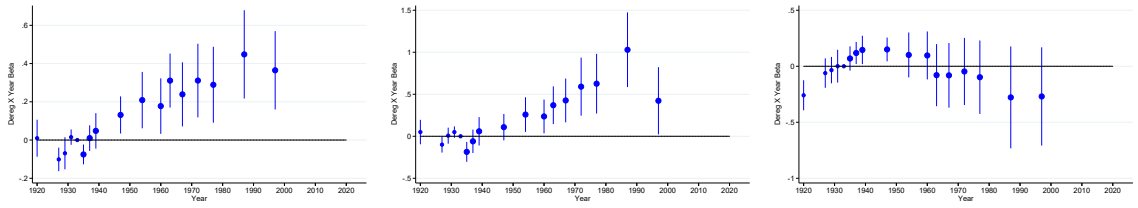
5.2.1 Manufacturing

Manufacturing activity accelerated in deregulated places, and again, the effects are long-lived. Figure 10a shows that access to bank branching had small effects during the 1930s but then grew afterwards, suggesting that bank branching accelerated economic development *after* deposits began to increase. This wave of bank branching rules did not diminish in impact as the more recent bout of branch deregulation began, but

[14] Specifically, we interact county- or state-level variables with time fixed effects to control for their potentially confounding time-varying effects in separate regressions. This also conclusion also holds for the results in the next subsection.

lingered.

Figure 10: Branch deregulation's effects on log manufacturing value-added per capita



(a) Overall (b) Below 1929 median (c) Above 1929 median

Notes: Only counties in a border pair with a discontinuity in branching included. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the border pair and decade level. We use 1933 as the omitted year because census conducted before the Glass-Steagall Act. Population is interpolated between census years. Value-added is only for the manufacturing sector and medians are defined in the county border pair sample in 1929. We also control for the log number of banks in each state in each year and control for border pair-year dyad and county fixed effects. Observations are truncated at the 1 percent level in each year. Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations.

When stratifying the estimation sample by 1929 medians in the outcome variable, it is also the case that low value-added places experienced the biggest effects from bank branch deregulation. The effects of bank branching among above-median county pairs is noisy and small, shown in Figure 10c. Gains to lower value-added per capita places, in contrast, grew through the 1970s. This effect may capture some diversion of prior productive capacity from control counties across the state border, so we do not treat this as the direct effect of branching all else constant. Reassuringly, however, when we look at all counties in these sets of states, which abstracts from these negative proximity spillovers, we still see the same patterns (see Figure A.10). Manufacturing establishments per capita also rose as a result of deregulation, which suggests bank branching stimulated manufacturing as local financial capacity rose (see Figure A.7).

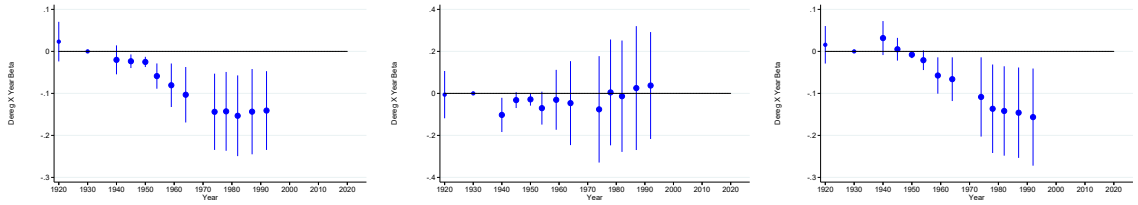
5.2.2 Agriculture

Not all sectors grew in the wake of financial development, however. We show that the agricultural sector shrank faster in branch deregulating counties compared to their unit banking counterparts across the border in Figure 11a. These results are the mirror image of the manufacturing ones: branch deregulating counties have persistently *lower* farms per capita, and these effects are driven by counties *above* the pre-Depression median. The timing, however, remains the same. Bank branching accelerated deposit growth, which then translated into declines in farming. The appendix demonstrates that branching-exposed areas with higher county-level farm land and building values also had larger falls in farm value per capita after 1930 (see Figure A.8).[15] Both the number and value of farming establishments contracted after the onset of branch

[15]There is a rise in farm values per capita in below-median counties, but this result does not generalize to the sample outside of border counties, unlike the others. Therefore we do not treat it as a robust finding.

deregulation as the number and value of manufacturing establishments rose, driven by less-developed locales. Combined, these results indicate that financial development translated into decades-faster structural transformation.

Figure 11: Branch deregulation's effects on log farms per capita



(a) Overall (b) Below 1930 median (c) Above 1930 median

Notes: Only counties in a border pair with a discontinuity in branching included. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the border pair and decade level. We use 1930 as the omitted year. Population is interpolated between census years. Medians are defined in the county border pair sample in 1930. We also control for the log number of banks in each state in each year and control for border pair-year dyad and county fixed effects. Observations are truncated at the 1 percent level in each year. Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations.

6 Internal capital markets and long run growth

The deregulation of bank branching can explain long-lived differences in financial and economic development between states which did not begin to fall until the 1970s. This section provides an explanation for why the 1930s bank deregulation wave accelerated deposit and manufacturing growth relative to unit banking-only places, particularly in ex ante less-developed locations. A robust macro literature posits that banks are particularly salient for long-run growth when financial development is otherwise low (Levine, 2005). Consistent with lower financial frictions accelerating economic development, we first show branch deregulation immediately leveled manufacturing dispersion within states. Then, we demonstrate why branch networks relax financial constraints which unit banks cannot. We show that branch offices faced lower barriers to capital mobility than unit banks due to networks' internal capital markets, which often concentrated loans in smaller branches.

6.1 Manufacturing sector convergence

The next step of our analysis establishes that the manufacturing sector became more similar within states which deregulated bank branching in the 1930s than in unit banking states. If capital flows towards smaller offices, and less-developed counties experience the strongest economic benefits from branch deregulation, as shown above, then we hypothesize that branch deregulation equalized access to capital within states with

branch networks. Because we cannot directly address questions of capital allocation due to a lack of long-run firm-level data, we instead focus on measures of manufacturing sector dispersion over space.

First, we show that deregulation lowered the concentration of manufacturing establishments within states during the 1930s. This combines both changes in firm entry and changes in the number of establishments per firm. We are agnostic as to which is changing, as higher branch access many spur on new entrepreneurs or help incumbent firms conduct business in new areas within the area served by the same set of internal capital markets. If bank branching helps direct funds towards more financially constrained and less developed areas, then those areas should gain manufacturing activity relative to other parts of the same capital market (here, the state). Therefore we examine the standard deviation of counties' share of each state's total manufacturing establishments in a given state over time. The higher the standard deviation, the more a state's manufacturing is concentrated in only a few counties, with a decline signaling a fall in the cross-county dispersion of manufacturing establishments. We show in Table 1 Column 1 that deregulating states experience the latter effect: the spatial distribution of manufacturing becomes more similar within these states over time. Dispersion in unit banking states comparatively remained elevated at the end of the Depression. Table 1 Column 2 shows these effects are driven by branching states with higher 1929 dispersion; this is consistent with the idea that branching lowered financial frictions, spurring manufacturing sector convergence where it was available.

Second, we demonstrate that bank branch deregulation increased average establishment value-added and output during the 1930s. These results complement the value-added and establishment per capita effects in the prior section by showing that bank branching improved establishments' productive capacity, not just the number of establishments. On average, Table 1 Columns 3 and 5 show that counties in deregulating states experienced a rise in value-added per establishment and output per establishment from 1929 to 1939. However, as seen in Columns 4 and 6, ex ante less productive counties increased more, especially in places which deregulated branching in the 1930s. Though these estimates likely contain some simple regression to the mean, it is striking that branching accelerated productivity growth in both cases. This exercise provides some evidence that bank branching deregulation induced states' manufacturing sectors to spread out while also spurring more output and value-added from each establishment, especially in places without significant pre-deregulation production. Though we cannot directly observe firms' inputs, these results are consistent with improvements in capital misallocation due to reductions in financial frictions.

Table 1: Branch deregulation and manufacturing convergence in the 1930s

	(1)	(2)	(3)	(4)	(5)	(6)
	%Δ SD est. per state		1929–39%Δ VA per est.		1929–39%Δ output per est.	
1(Branch)	-0.128*	0.000940	0.0712**		0.124***	
	(0.0666)	(0.0887)	(0.0340)		(0.0340)	
1929 SD		0.280				
		(0.227)				
1(Branch) x 1929 SD		-1.662**				
		(0.633)				
1929 VA per est				0.178***		
				(0.0420)		
1(Branch) x VA per est low				0.144*		
				(0.0757)		
1929 output per est						0.160***
						(0.0358)
1(Branch) x output per est low						0.214***
						(0.0669)
Constant	-0.139***	-0.157***	-0.0573***	-0.142***	-0.0550***	-0.125***
	(0.0287)	(0.0351)	(0.0200)	(0.0206)	(0.0200)	(0.0188)
Observations	48	48	824	824	869	869
Level	State	State	County	County	County	County
Fixed Effects	N	N	N	State	N	State

Notes: Branch indicator is 1 for states deregulating branching between 1933 and 1939. All states included in the first two columns, only counties in states not permitting branching by 1933 included in county regressions. Medians calculated within sample. Standard deviations calculated in each year based on share of state manufacturing establishments in each county. Standard errors are heteroskedasticity-robust due to the small number of clusters (24 in the final 4 columns). * p<0.1, ** p<0.05, *** p<0.01

6.2 Branch networks and capital flows

Bank branch networks may reduce financial frictions for several reasons. By virtue of operating multiple offices, bank branch networks are often larger than unit banks, leading to economies of scale, economies of scope, and the ability to use internal, rather than external, capital markets to shift funds geographically. In recent decades, the move towards interstate branch networks has induced markedly higher income growth and financial inclusion, among other outcomes, through the first two of these channels (Kroszner and Strahan, 2014). However, in the Great Depression, branch banks could still operate only in one state, and as seen above, faced a web of restrictions on where and how they could expand. As a result, these networks were much more similar in size to unit banks in the decades following the Glass Steagall Act, suggesting that scale effects were far less likely. Indeed, Figure A.1 shows that branch networks and unit banks had fairly similar loan-asset and interbank loan-asset ratios overall in the late 1930s.

This leaves one major difference between branch offices and unit banks: internal capital markets. Branch networks have the ability to funnel funds within the organization while unit banks can only do so by borrowing or lending externally. Branch membership will differentiate offices if internal and external capital markets are not perfect substitutes. A priori it is not obvious which form of network yields more financial intermediation; theory suggests it depends on the structure of agency costs within organizations (Gertner, Scharfstein, and Stein, 1994).[16] Depending on how banks used internal versus external capital markets, branch networks may have had one more margin on which to adjust their balance sheets office by office, potentially altering other dimensions of their portfolios.

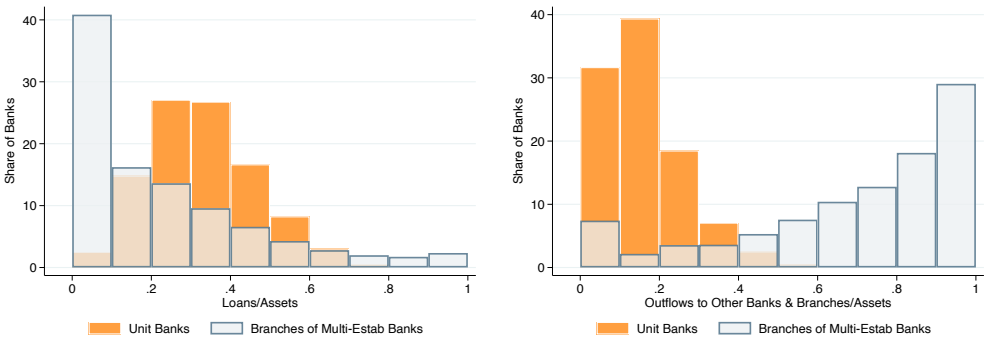
Given this theoretical ambiguity with respect to capital market access, we characterize the differences in their usage in our 1937 cross section of Federal Reserve member banking offices. This unique dataset separately measures each bank establishment's balance sheet, allowing us to observe where exactly each firm is lending. In the case of unit banks, this distinction is trivial, but because branch networks operate multiple offices, these data provide a window into how networks redistribute funds across offices to make loans. Crucially, this permits us to compare internal capital market usage, which aggregate to zero at the bank level, to external capital market patterns, which all banks can use. Our analysis proceeds in three steps: 1) we show that 1930s branch networks treated internal capital markets and lending as substitutes at the office level, unlike unit banks' participation in external capital markets, 2) this difference can be explained by bank office size, and 3) this difference translates into more local lending.

Figure 12 presents histograms for the share of assets that banking offices put into bank transfers. We

[16] Bank headquarters may be able to monitor branches more efficiently than they could other banks, reducing the costs typically associated with lending (Diamond, 1984; Gertner, Scharfstein, and Stein, 1994). In contrast, if there is rent-seeking within an organization, internal capital markets are less efficient (Scharfstein and Stein, 2000; Rajan, Servaes, and Zingales, 2000).

first contrast interbank transfers for unit banks and within-network, or intrabank, transfers for members of branch network systems in Figure 12b. Unit banks largely avoid allocating too many funds to interbank transfers; this distribution is highly right skewed. Branch banks, however, are bimodal with ten percent of offices not transferring any money to the rest of the branch system. The density of branching offices increases with the transfer share except for this cluster at zero. By observing both within and across network bank transfers, we find evidence of internal capital market usage for branch offices which we do not replicate for unit banks' external capital market participation.

Figure 12: Contrasting branch and unit office asset shares, 1937



(a) Loans/Assets

(b) Bank Transfers/Assets

Notes: Branches' asset shares calculated using branch balance sheets while unit bank balance sheets are using bank-level balance sheets. All Federal Reserve member bank offices in 1937 included. For branches, bank transfers includes both bank transfers and intra-bank transfers while unit banks only use bank transfers. Sources: Federal Reserve Board (1937) and authors' calculations.

Branch networks used these transfers to concentrate loans in only some of their establishments. The distribution of branch loan-asset ratios, also plotted in Figure 12a, has the reverse pattern as the bank transfer figure. Branches have a highly right skewed loan-deposit ratio when examining them office by office. There is a large mass near 0, implying that a large number of branches primarily issued deposits without creating loans. This is in marked contrast to unit banks; unit banks' bank transfer asset share is more *right* skewed than their loan-asset ratio. Branches either transferred their deposits elsewhere in the network or made loans locally while most unit banks only did the latter and did not export funds the same way.

Individual branches' asset allocation do not reflect bank aggregates, and in fact, likely had a very different business model than unit banks. For this difference to explain the persistent effects in the prior section, it must be the case that branch networks funneled funds to less-developed areas, which the prior section showed had the largest long-run benefits from branch deregulation. We provide evidence on this margin by contrasting how unit banks and branch networks' capital flows varied with banking office size. Specifically we regress capital inflows (a deposit into the banking office from elsewhere) and capital outflows(a loan made

Table 2: Banking office capital flows, branch membership and banking office size

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Bank Outflows			Log Bank Inflows		
1(Branch)	-0.170	-0.323	-1.300	-7.142***	-7.330***	-5.222***
	(0.682)	(0.564)	(0.788)	(0.355)	(0.473)	(0.514)
Deposits over median		2.198***	1.876***		2.722***	3.422***
		(0.174)	(0.0664)		(0.295)	(0.286)
Branch x Deposits			1.625**			-3.513***
			(0.797)			(0.555)
Constant	12.07***	11.02***	11.17***	8.810***	7.503***	7.184***
	(0.151)	(0.133)	(0.107)	(0.0790)	(0.163)	(0.135)
Observations	7689	7689	7689	7689	7689	7689

Notes: Regression table omits state - bank charter type dyad fixed effects. Standard errors clustered at state-charter level in parentheses. All Federal Reserve member banking offices in 1937 included. * p<0.1, ** p<0.05, *** p<0.01

to another banking office) at each banking establishment e operating in state s with charter type c in 1937:

$$CAPITALFLOW_{e,s,c} = \beta_0 + \beta_1 1(BRANCH)_e + \beta_2 DEPOSITS_e + \beta_3 1(BRANCH) \times DEPOSITS_e + \beta_{s,c} + \epsilon_{s,c} \quad (4)$$

We focus on whether capital flows varied by branch status ($1(BRANCH)_e$) and banking office size (banking office deposits greater than the sample median, $DEPOSITS_e$), holding regulatory differences constant with state-charter type fixed effects. Our main coefficient of interest is the interaction term β_3, which reflects whether branch networks differentially participated in capital markets based on local financial development, as proxied by the amount of deposits at a banking office. Standard errors are clustered at the same level as the fixed effects. Table 2 presents results on both capital outflows (loans made to other banking offices) and inflows (deposits from other banking offices).

Table 2 Columns 1 through 3 examine the effect of branch network membership on banking offices' capital outflows. The branch indicator is negative but not consistently statistically significant for this outcome. However, the sign is reversed when interacted in Column 3 with local financial development. The larger the banking office, the more likely the banking office is to move money elsewhere (as also seen in Column 2). The β_3 coefficient is almost as large as the β_2 coefficient and offsets the β_1 effect, suggesting that large branch offices experienced substantively higher outflows than small ones, even when adjusting for size differences.

In contrast, Table 2 Columns 4 through 6 show that small branches experienced much larger inflows of capital than large ones. Branch networks had smaller capital inflows overall, but there is a negative interaction between banking office deposits and branch status. Offices with fewer deposits experienced larger inflows than larger ones, and we take this as evidence that external and internal capital markets

Table 3: Capital market inflows, branch membership, and banking office outcomes

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Office Deposits			Non-Bank Loans/Assets		
1(Branch)	0.00262	0.307	1.250***	-0.155***	-0.129***	-0.212***
	(0.222)	(0.348)	(0.204)	(0.0152)	(0.0237)	(0.0148)
1(Receive Inflows)		0.387	1.160***		0.0330	-0.0353***
		(0.254)	(0.0679)		(0.0209)	(0.00758)
Branch x 1(Receive)			-1.856***			0.165***
			(0.490)			(0.0504)
Constant	13.92***	13.55***	12.82***	0.193***	0.161***	0.226***
	(0.0486)	(0.259)	(0.0747)	(0.00333)	(0.0205)	(0.00803)
Observations	7639	7639	7639	7645	7645	7645

Notes: Regression table omits state - bank charter type dyad fixed effects. Standard errors clustered at state-charter level in parentheses. All Federal Reserve member banking offices in 1937 included. * p<0.1, ** p<0.05, *** p<0.01

directed funds to different offices in this dataset

To confirm that internal capital market transfer locations differed from external capital market receivers, we regress log banking office deposits on a branch indicator, an indicator for receiving capital inflows, and the interaction between those two measures in Table 3. Though branches are no smaller overall than unit banks in terms of log deposits (see Column 1), there is a strong negative association between branching and receiving inflows which is about 60 percent larger in magnitude than the inflow indicator in Column 3. These estimates suggest that bank branch networks could and did use internal capital markets to redirect deposits to less-developed branches.

The last piece in this chain is to show that these small branches transformed capital inflows into more local lending than unit banks. Table 3 Columns 4 through 6 examines how branches and unit banks' share of assets allocated to non-bank loans varied by whether or not they receive bank deposits (either within or across networks). As we might expect from Figure 12's right-skewed branch loan-asset ratios, Column 4 shows a negative effect of branching approximately the same size as the sample's median outcome. Adding an indicator for capital market inflows in Column 5 reveals that banking offices have higher loan-asset ratios if they receive bank transfers. However, as Column 6 shows, that relationship is solely driven by branch offices receiving flows. The indicator for receiving capital flows turns slightly negative while its interaction with branch status becomes large and statistically significant. Branches receiving capital market transfers do most of their bank's lending, despite being smaller on average than other establishments in the branch network. Unit banks' use of external capital markets fails to replicate this sort of targeted lending, which may help explain why branching induced such strong, persistent local effects.

More suggestively, these results are driven by states which included "bankless town" provisions in their

branch deregulation.[17] When we split our branching treatment group by whether states lowered the barriers to branching for place not served by any bank, we see that the small branch inflows and large branch outflows are driven by these "banklessness" conditions. Again, this is consistent with branch networks facilitating the movement of funds to the parts of their networks most starved of capital. Later nationwide studies align with these results, finding that branch offices lend more of their assets than comparable unit banks in smaller communities, allowing them to succeed where unit banks could not (Schweiger and McGee, 1961).

7 Conclusion

This paper documents that a significant change in United States financial regulation occurred during the 1930s. Motivated by a desire to restore banking services in the wake of the Depression, many states permitted bank branching for the first time in their histories. However, skepticism about large-scale finance meant that these branching laws often incentivized entry in smaller, less-developed areas and capped branch networks' sizes. The uneven access to bank branching granted by these laws lasted until the start of the interstate banking deregulations of the 1970s. They were quantitatively significant: by the 1970s, over 70% of bank offices belonged to a branch network.

National trends blur significant, long-lasting divergence from bank branching deregulation. States that deregulated in the aftermath of the Great Depression experienced faster recovery and persistently higher financial development in the subsequent decades. This one-time shock to financial access accelerated deposit and manufacturing growth which did not decline as national financial markets deregulated. Less-developed counties drive these results, suggesting that aggregate financial development failed to induce convergence where financial frictions were highest.

This path dependence in financial access can be explained by improvements in capital mobility. Using banking office-level balance sheets, we show that bank offices in branch networks are better able to both mobilize and utilize capital from other locations, which suggests branch offices were better able to channel capital to areas with higher returns. Also consistent with this mechanism, we find that manufacturing dispersion fell within deregulating states. Future work should investigate further the barriers which keep financial development from creating regional convergence.

[17] See Figure B.2 for an example of this condition.

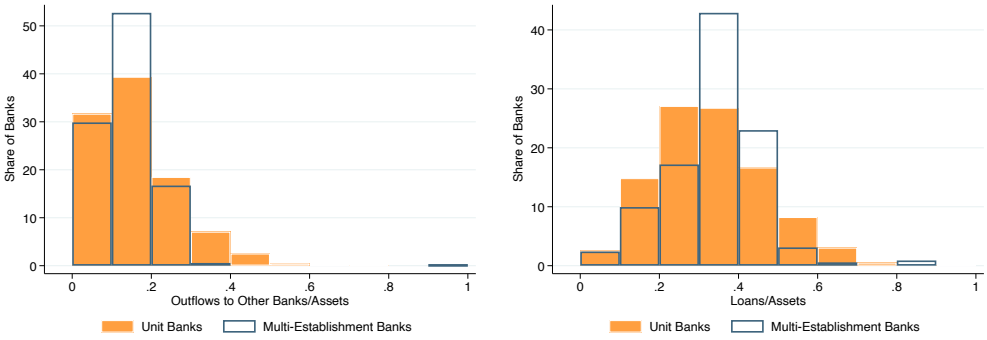
A Additional Tables and Figures

Table A.1: Branch Entry Clauses Over Time

Clause Type	1924	1929	1936
Prohibited	17	22	9
No law	12	7	5
A: Geographic			
Single city	4	6	4
Limited	4	4	13
Statewide	11	9	17
B: Competition			
Maximum network branches	2	3	5
Location bankless	0	1	18
C: Capital			
Branch minimum	9	11	20
Bank minimum	3	4	17
D: Population			
Minimum	2	6	12
Maximum	0	1	3
Memo: no restrictions	2	2	2
Memo: only geographic restrictions	1	2	1

Sources: Counsel of the Board of Governors (1925), Counsel of the Board of Governors (1930), Counsel of the Board of Governors (1936), and authors' calculations. From left to right, these columns represent the stock of laws as of December 31, 1924; December 31, 1929; and June 1, 1936. Only the first five rows are mutually exclusive within each year. Capital requirements here refer to the existence of branch-qualifying amounts, not those for unit bank entry. With the exception of Kentucky, states with no laws on branching tacitly prohibited them. No restrictions includes states which permitted statewide branching subject to no other restrictions while "only geographic restrictions" includes those states which allow either city or limited branching without other qualifiers.

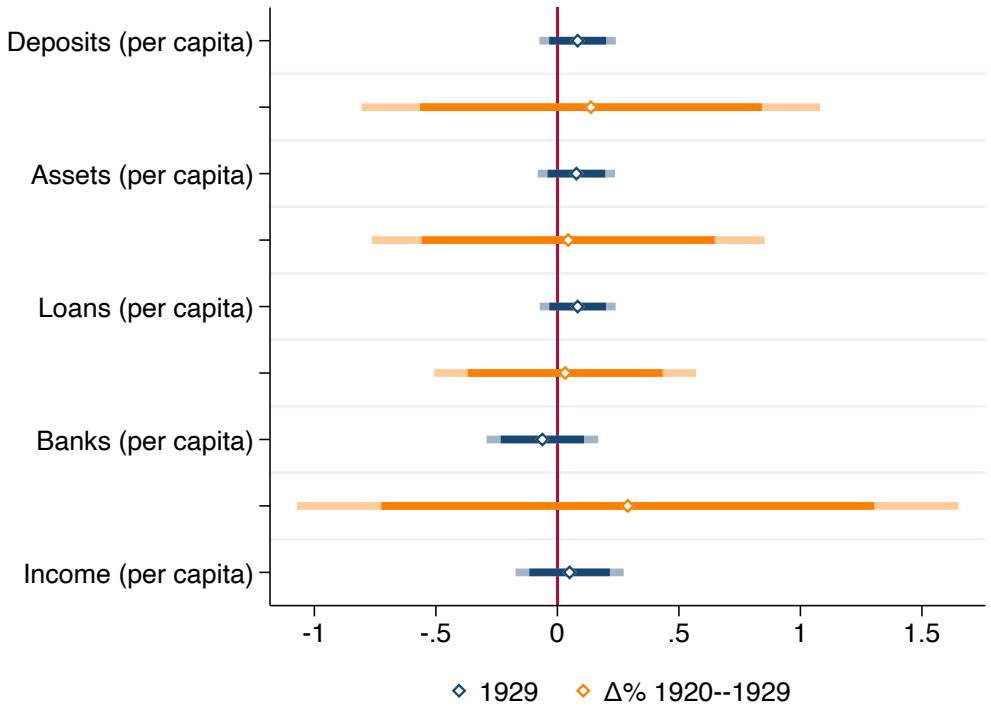
Figure A.1: Contrasting branch network and unit bank balance sheets, 1937



(a) Interbank Loan/Assets (b) Loan/Assets

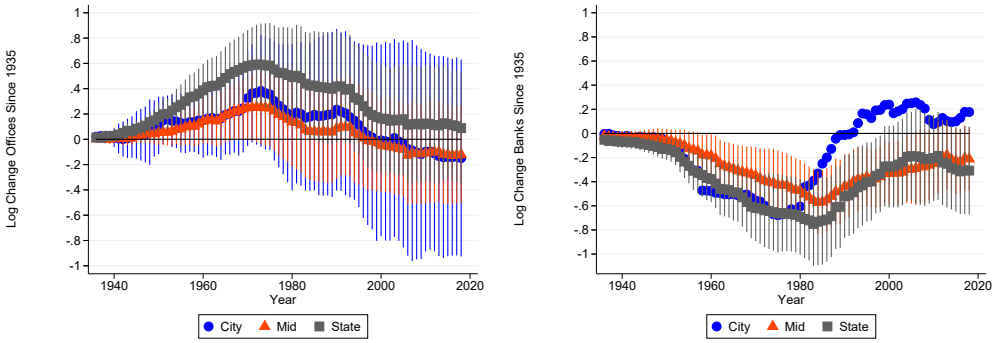
Sources: Federal Reserve Board (1937) and authors' calculations. All balance sheets are at the bank level. All Federal Reserve member bank offices in 1937 included. Interbank loans include only external bank transfers.

Figure A.2: State Characteristics Balance on Deregulation



Sources: Bank data–Flood (1991), population–FRED, per capita personal income–FRED. Each row is the result of a regression on state-level outcomes on an indicator for deregulating branching during the 1930s, omitting states allowing cross-city branching before 1929 , along with 90 and 95% confidence intervals. Standard errors are robust.

Figure A.3: Long Run Banking Development and Geographic Deregulation

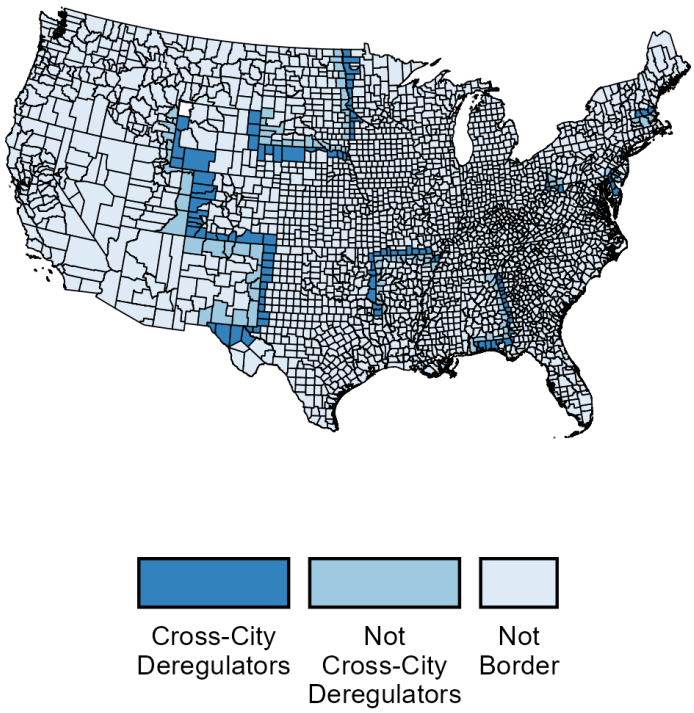


(a) Banking Offices

(b) Banks

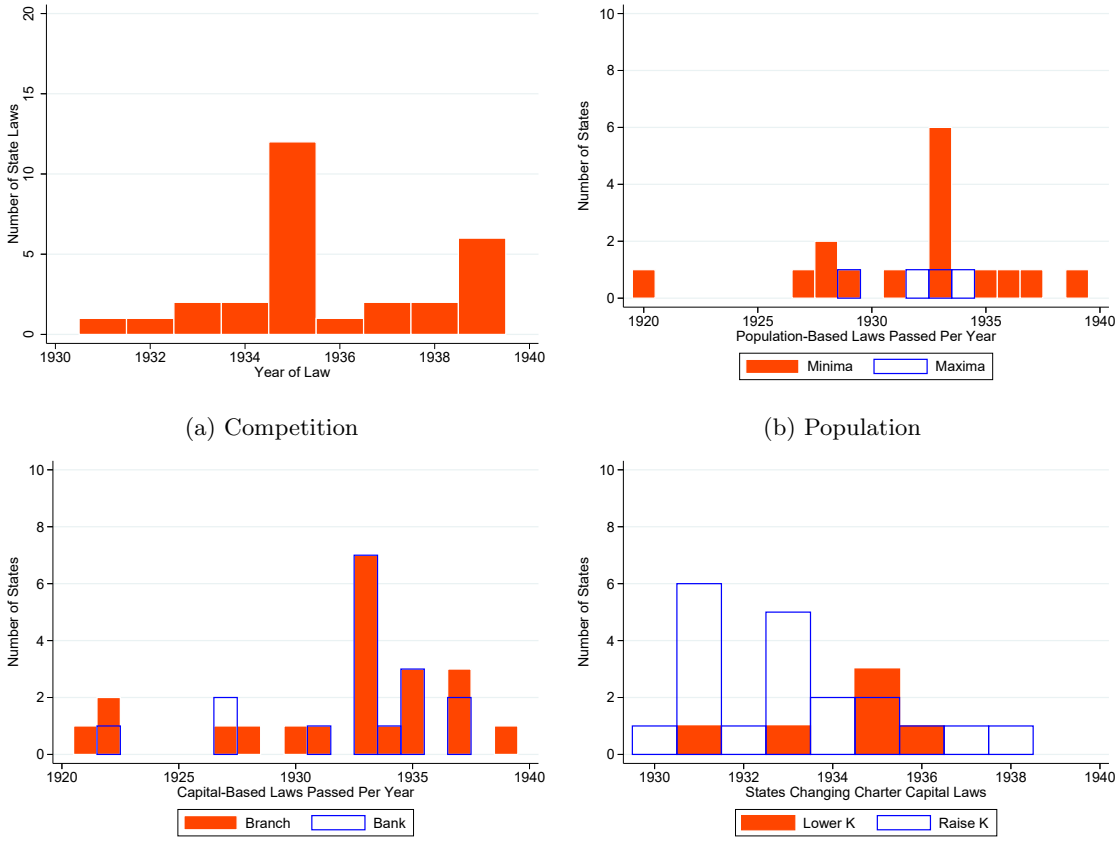
Sources: State session laws, FDIC, and authors' calculations. Each point is the result of a separate regression of the log change in the outcome relative to 1935 on 1939 branch geography legality, controlling for region fixed effects. City standard errors omitted because no coefficient was significant at conventional levels.

Figure A.4: County border pair sample map



This map displays the counties which are on a state border where state branching laws change between contiguous states as of 1939. All states permitting cross-city branching in 1929 are dropped from the sample, as are state borders without a change in branching policy at the state line. Dark blue shaded states permit cross-city branching, light blue states permit only city-wide branching, and gray shaded states do not permit branching.

Figure A.5: Types of State Bank Regulation Passed, 1920–1940



(a) Competition

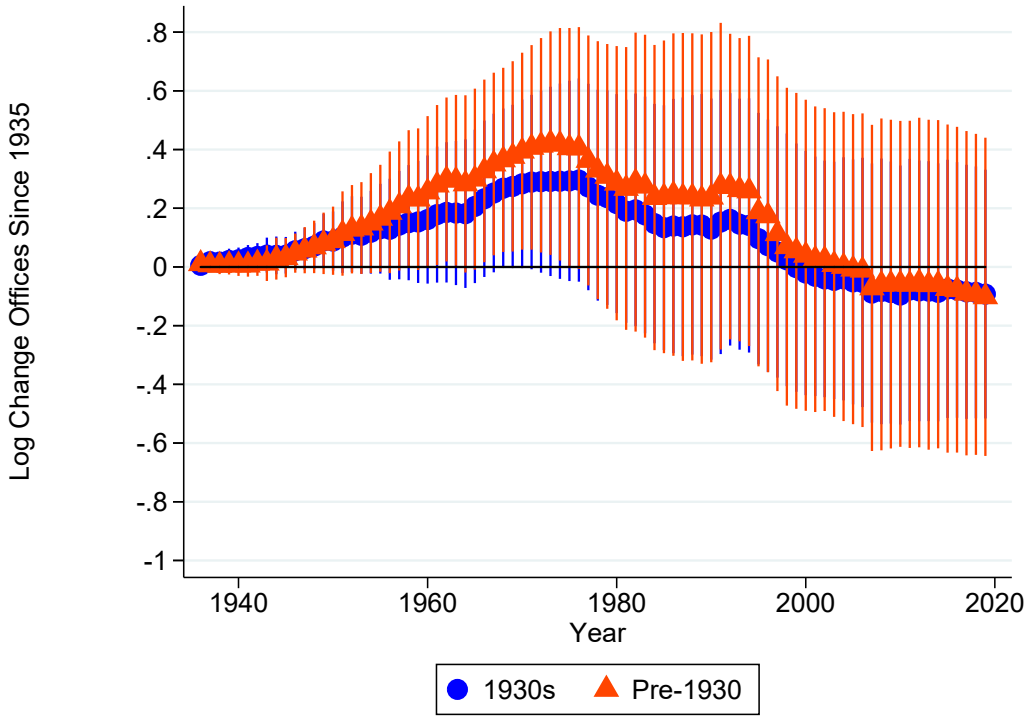
(b) Population

(c) Branching Capital

(d) Unit Bank Capital

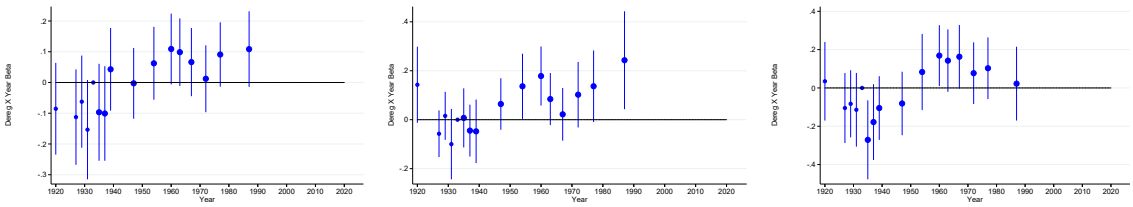
Sources: State session laws and authors' calculations.

Figure A.6: Long Run Banking Development by Timing of Deregulation



Sources: State session laws, FDIC, and authors' calculations. Each point is the result of a separate regression of the log change in the outcome relative to 1935 on 1939 branch legality, (separately for pre-1930 and 1930s first deregulation) controlling for region fixed effects.

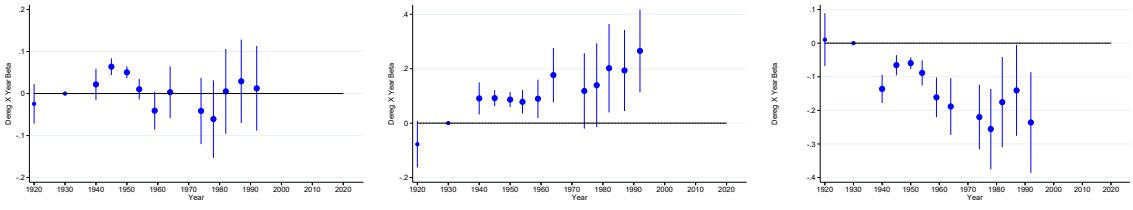
Figure A.7: Branch deregulation's effects on log manufacturing establishments per capita



(a) Overall (b) Below 1929 median (c) Above 1929 median

Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the border pair and decade level. We use 1933 as the omitted year because census conducted before the Glass-Steagall Act. Population is interpolated between census years. Outcome is log number of manufacturing establishments per capita in each county in each year and medians are defined in the county border pair sample in 1929. Observations are truncated at the 1 percent level in each year.

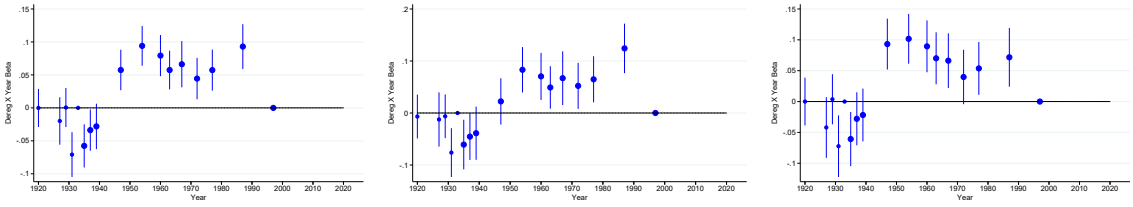
Figure A.8: Branch deregulation's effects on log farm value per capita



(a) Overall (b) Below 1930 median (c) Above 1930 median

Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the border pair and decade level. We use 1930 as the omitted year. Farm value refers to land and buildings only. Population is interpolated between census years. Medians are defined in the county border pair sample in 1930. Observations are truncated at the 1 percent level in each year.

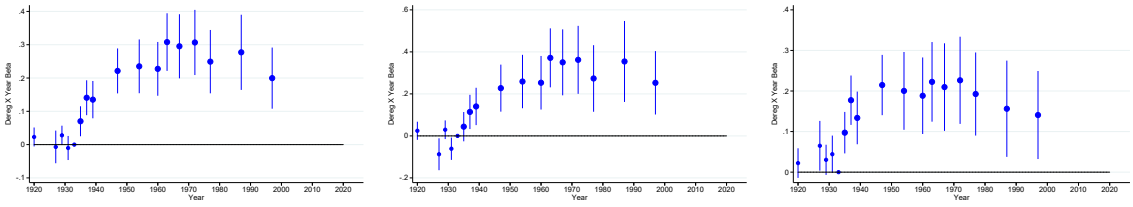
Figure A.9: Log manufacturing establishments per capita using all potential counties



(a) Overall (b) Below 1929 median (c) Above 1929 median

Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations. This regression includes all counties in post-1933 states, with treatment defined as 1930s deregulation after 1933. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the county level. We use 1933 as the omitted year. Other controls are the 1920 outcome and 1920–29 percent change in the outcome separately interacted with each year, county fixed effects, and census region-year dyad fixed effects. Population is interpolated between census years. Medians are defined in the county border pair sample in 1929. Observations are truncated at the 1 percent level in each year.

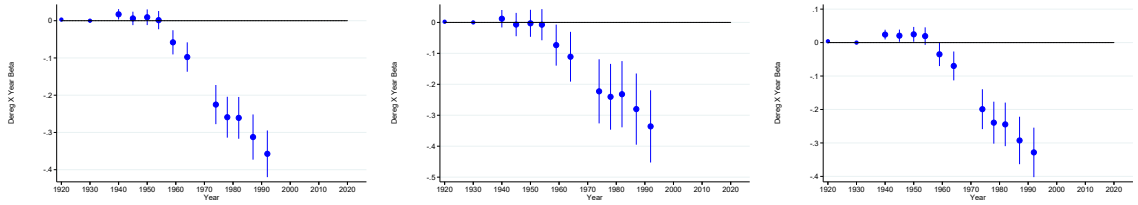
Figure A.10: Log manufacturing value-added per capita using all potential counties



(a) Overall (b) Below 1929 median (c) Above 1929 median

Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations. This regression includes all counties in post-1933 states, with treatment defined as 1930s deregulation after 1933. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the county level. We use 1933 as the omitted year. Other controls are the 1920 outcome and 1920–29 percent change in the outcome separately interacted with each year, county fixed effects, and census region-year dyad fixed effects. Population is interpolated between census years. Medians are defined in the county border pair sample in 1929. Observations are truncated at the 1 percent level in each year.

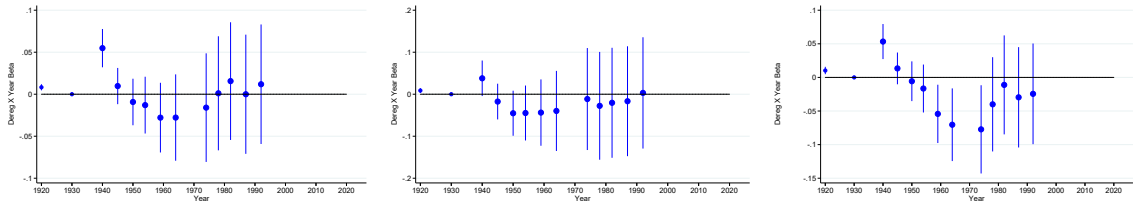
Figure A.11: Log farms per capita using all potential counties



(a) Overall (b) Below 1930 median (c) Above 1930 median

Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations. This regression includes all counties in post-1933 states, with treatment defined as 1930s deregulation after 1933. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the county level. We use 1930 as the omitted year. Other controls are the 1920 outcome and 1920–29 percent change in the outcome separately interacted with each year, county fixed effects, and census region-year dyad fixed effects. Population is interpolated between census years. Medians are defined in the county border pair sample in 1930. Observations are truncated at the 1 percent level in each year.

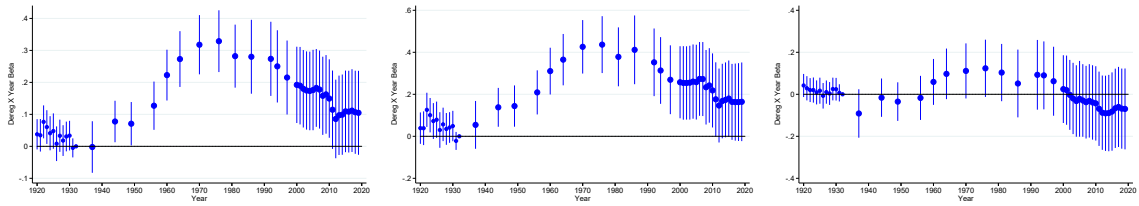
Figure A.12: Log farm value per capita using all potential counties



(a) Overall (b) Below 1930 median (c) Above 1930 median

Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations. This regression includes all counties in post-1933 states, with treatment defined as 1930s deregulation after 1933. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the county level. We use 1930 as the omitted year. Other controls are the 1920 outcome and 1920–29 percent change in the outcome separately interacted with each year, county fixed effects, and census region-year dyad fixed effects. Population is interpolated between census years. Medians are defined in the county border pair sample in 1930. Observations are truncated at the 1 percent level in each year.

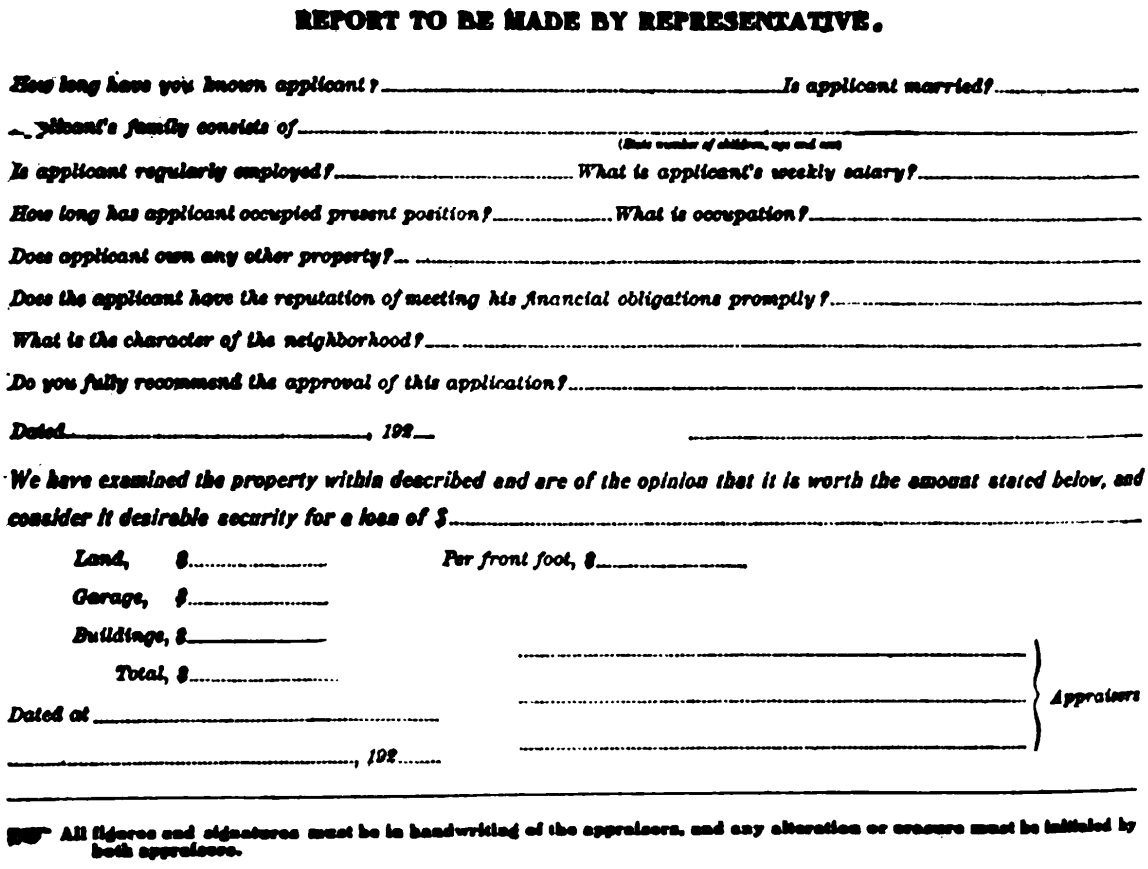
Figure A.13: Log deposits using all potential counties



(a) Overall (b) Below 1929 median (c) Above 1929 median

Sources: State session laws, FDIC, Federal Reserve call reports, ICPSR, and authors' calculations. This regression includes all counties in post-1933 states with 1937 call report data, with treatment defined as 1930s deregulation after 1933. Each point is the β coefficient for 1930s Deregulation interacted with that year with 95 percent confidence intervals, defined using standard errors two-way clustered at the county level. We use 1930 as the omitted year. Other controls are the 1920 outcome and 1920–28 and 1928–29 percent changes in the outcome separately interacted with each year, county fixed effects, and census region-year dyad fixed effects. Population is interpolated between census years. Medians are defined in the county border pair sample in 1929. Observations are truncated at the 1 percent level in each year.

Figure A.14: Sample 1920s loan application



REPORT TO BE MADE BY REPRESENTATIVE.

How long have you known applicant? _____ Is applicant married? _____

Applicant's family consists of _____
(State number of children, age and sex)

Is applicant regularly employed? _____ What is applicant's weekly salary? _____

How long has applicant occupied present position? _____ What is occupation? _____

Does applicant own any other property? _____

Does the applicant have the reputation of meeting his financial obligations promptly? _____

What is the character of the neighborhood? _____

Do you fully recommend the approval of this application? _____

Dated _____, 192__ _____

We have examined the property within described and are of the opinion that it is worth the amount stated below, and consider it desirable security for a loan of $ _____

Land, $ _____ Per front foot, $ _____

Garage, $ _____

Buildings, $ _____

Total, $ _____

Dated at _____ _____ } Appraisers

_____, 192____ _____

☞ All figures and signatures must be in handwriting of the appraisers, and any alteration or erasure must be initialed by both appraisers.

Source: Sample bank real estate loan from North, Smith et al. (1928).

B Constructing the legal database

B.1 Data sources

We collect and standardize bank branching regulations from 1910 to 1994 based on the laws passed by each state legislature over that time frame. This allows us to identify the flow of conditions governing bank branching from the National Banking Era to the modern branch deregulation. We start with 11 collections of state laws put together by federal bank regulators and lawyers spanning 1910 to 1993. The first, Welldon (1910), lists a range of bank legal conditions in force in 1910. We take this as our starting point. Then, we check branching laws in a series of Federal Reserve Board (various years) articles (1924, 1930, 1932, 1936, 1939, 1959) and research publication (Federal Reserve System, 1931), which list the stock of current laws. After 1959, we use a series of law review articles (Gup, 1971; Hablutzel, 1977) and the post-1960 legal compilation conducted by Amel (1993) to trace out the geographic constraints governing bank branching (defined below).

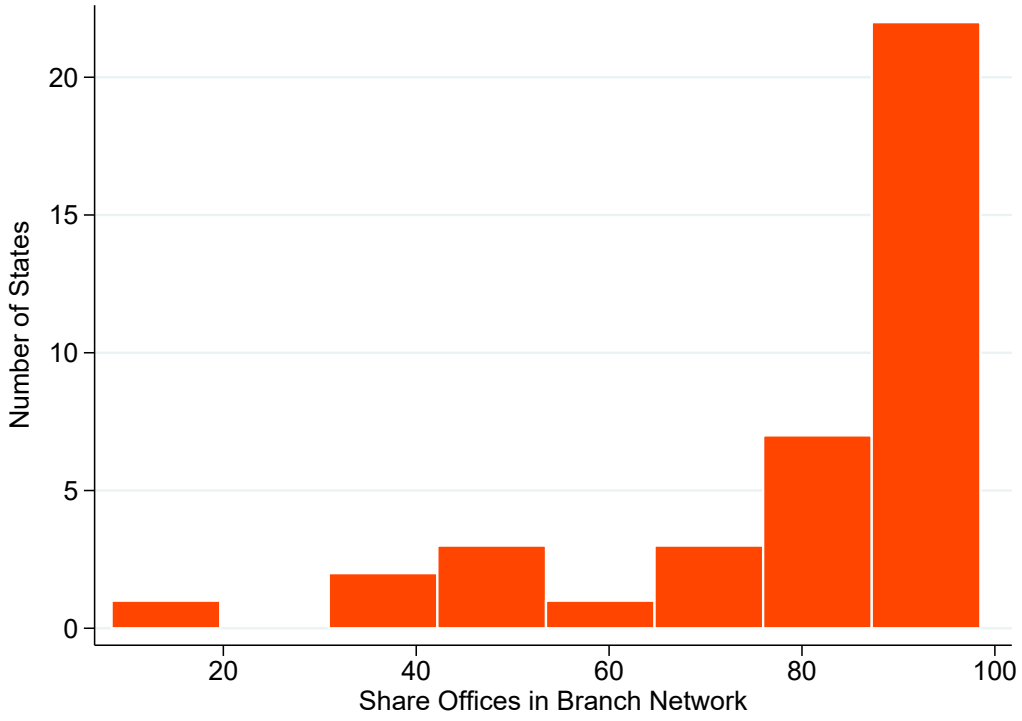
If there are any changes in law content between cross-sections, we manually search the flow of state laws, searching forward from the first cross-section of laws to the next to find each law change using the State Session Laws database on HeinOnline.[18] Keyword searches permit us to identify each law that mentions branching for each state over this time period for further review. We manually review each law to check whether it altered the conditions under which branch banking could occur.

This process yields a comprehensive list of branching laws for each state. These laws typically trace out the legal evolution of bank branching from total prohibition to modern *de novo* branching that is not conditional on any other requirements does not require any other pre-requisites. While previous research has typically focused on the final stage of deregulation (unrestricted *de novo* branching) as defined by Amel (1993), our approach differs in two important ways. First, we trace the entire legal evolution of bank branching, from total prohibition through various conditional stages to eventual full liberalization. Second, we examine a much longer time span than previous studies.

This broader approach is necessary because by the time states reached their final deregulation date as documented in Amel (1993), most already had extensive branch networks. Figure B.1 plots the branch share of banking offices in each state the year before their final *de novo* deregulation; over half of states had branch shares over 90% at that time. Therefore, we focus on understanding how branch expansion occurred under earlier, more restricted regulatory regimes, which captures the most significant periods of branching development in most states.

[18] This database contains high-quality text from every law passed by every state legislature at every meeting over our period.

Figure B.1: The branch share of banking offices in each state the year prior to their final branch deregulation



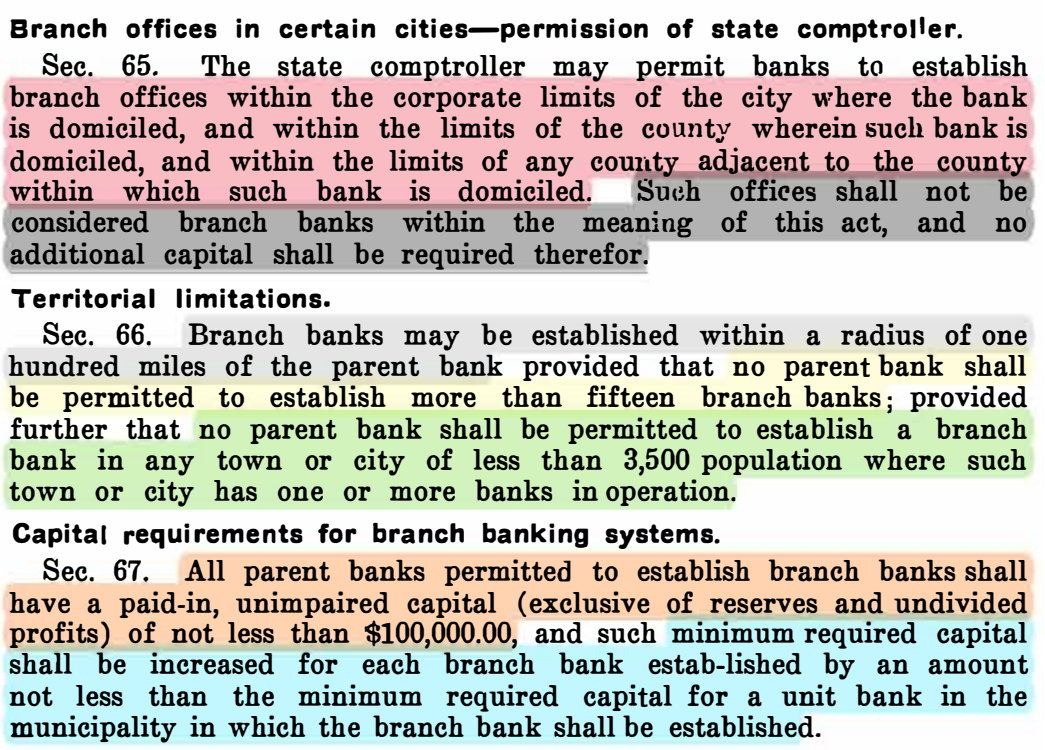
Sources: FDIC BankFind and Amel (1993). We calculate the share of banking offices in each state which are part of branch networks in the year prior to the intrastate full service branch deregulation from Jayaratne and Strahan (1996) sourced from Amel (1993) or the passage of the Riegle-Neal Act in 1994. This omits 11 states which permitted unrestricted intrastate branching before 1960 (AK, AZ, CA, DE, ID, MD, NV, NC, RI, SC, SD) and therefore are omitted from Amel (1993).

B.2 Definitions

We next categorize the branching laws in our database based on the conditions they impose on branch expansion. Because our focus is on geographical differences in branch access, we emphasize the *de jure* rules that govern where branches could be located. This approach deliberately sets aside changes in discretionary charter issuance, as we can directly observe those changes by tracking actual bank and branch openings. After reviewing the legal digests described above, we identify four main categories of regulatory conditions in our corpus of state session laws: (1) geographic rules, (2) population restrictions, (3) competition requirements, and (4) capital requirements. While in some instances these conditions operated independently, they were more often interdependent. Therefore, we examine each law for all four categories of conditions, documenting each instance in which a law either modified a previously enacted rule or established a new one. Figure B.2 illustrates this interdependence with an example from Mississippi, which shows how multiple entry conditions jointly regulated branch establishment for both state and national banks.

Geographic rules: Geographic rules limited the area in which banks could branch. These proscriptions

Figure B.2: Sample bank branching regulation



Branch offices in certain cities—permission of state comptroller.

Sec. 65. The state comptroller may permit banks to establish branch offices within the corporate limits of the city where the bank is domiciled, and within the limits of the county wherein such bank is domiciled, and within the limits of any county adjacent to the county within which such bank is domiciled. Such offices shall not be considered branch banks within the meaning of this act, and no additional capital shall be required therefor.

Territorial limitations.

Sec. 66. Branch banks may be established within a radius of one hundred miles of the parent bank provided that no parent bank shall be permitted to establish more than fifteen branch banks; provided further that no parent bank shall be permitted to establish a branch bank in any town or city of less than 3,500 population where such town or city has one or more banks in operation.

Capital requirements for branch banking systems.

Sec. 67. All parent banks permitted to establish branch banks shall have a paid-in, unimpaired capital (exclusive of reserves and undivided profits) of not less than $100,000.00, and such minimum required capital shall be increased for each branch bank estab-lished by an amount not less than the minimum required capital for a unit bank in the municipality in which the branch bank shall be established.

Sources: Mississippi Session Laws 1934, ch.134. These laws apply to all banks except capital for Federal Reserve member banks (which was higher). Each color corresponds to a different clause governing bank branching. The top section is an exemption to the other two sections' conditions in case of a banking emergency.

ranged from within-city branching to state-wide branching (i.e., no restriction). We group together all laws permitting cross-city branching in our analysis, so changes in geographic rules occur if states switched between the following regimes: unit banking only, within-city branching only, and cross-city branching. We treat a lack of any branching law as a unit banking state because, as in the Glass-Steagall Act (see Figure B.3), a lack of explicit branching permission prohibited creating new branches.

Population restrictions: Regulators used city population thresholds to govern the possibility of bank branching at a more disaggregated level than geographic restrictions alone. By restricting branch operation to larger cities ("population minima"), regulators limited the potential for branch banks to dominate rural banking markets. For the most part, the direct population thresholds set a minimum city size for branches (e.g. the 3,500 person number in Figure B.2) but there were exceptions. Georgia, for example, also set population maximum rules for branch entry.

Competition requirements: Many early branch banking laws sought to restrict branch network networks to locations where no other banks operated. These "bankless town" clauses restricted branch expansion to *de novo* branching only in places lacking any banking office, or they explicitly limited the ability to expand

branch services through a merger with unit banks. For example, Idaho's 1935 banking act legalized branching in 3 specific scenarios tied to local competition: the expanding bank could merge with an existing unit bank in existence for five years, open a *de novo* branch with unanimous consent from existing bankers in a town, or open a *de novo* branch in a town currently without any banking offices (Counsel of the Board of Governors, 1936). The bankless town provisions were often the only exception allowed in branching regulations because they addressed a unique situation: by definition, a city without banks could not be merged into a network, so only de novo branching could serve these communities. This explains why locations without any banks frequently received special treatment in branching laws, as demonstrated in section 66 of the Mississippi regulations (Figure B.2).

Alternatively, lawmakers placed a cap on the number of branches a network could operate ("maximum branches"), as in Figure B.2. We refer to these two types of clauses as competition clauses because they limited branch networks' ability to affect other banks.

Note that we do not include in this definition the oft-nebulously worded "public convenience" criterion due to its uneven application by branch banking regulatory regimes over time.

Capital requirements: Bank capital governed branch entry in two distinct ways. First, regulators established minimum capital thresholds that banks needed to meet before they could begin branching. The Glass-Steagall Act, for example, used state population figures to determine the minimum required capital for any bank operating branches (see Figure B.3). State regulators employed similar requirements to ensure that only larger banks could operate multiple branches. Federal Reserve member banks were required to comply with whichever capital requirement was more stringent—federal or state.

In addition to branch-specific capital rules, we also trace minimum capital requirements for all state banks over time using the same iterative state session law process. Most states established a floor on the charter capital banks needed to open. In many cases, similar to national banks, these requirements increased at specific population thresholds. We collected these general capital requirements across the entire city size distribution in each state from 1910 to 1940 to ensure we could distinguish between changes affecting branch bank entry versus unit bank entry in our results.

Comparative regulatory context: To place bank branching regulation in a broader context, we also examine whether non-financial chain store laws changed during the 1929-1940 period using Library of Congress-authored legal digests first digitized by Quincy and Xu (2024). By comparing branch deregulation to changes in chain store taxation and expansion conditions, we can demonstrate that our results are specific to bank branch deregulation rather than reflecting overall pro-corporate regulatory attitudes.

Figure B.3: Branching provisions in the Banking Act of 1933

SEC. 23. Paragraph (c) of section 5155 of the Revised Statutes, as amended (U.S.C., title 12, sec. 36), is amended to read as follows:

"(c) A national banking association may, with the approval of the Comptroller of the Currency, establish and operate new branches: (1) Within the limits of the city, town or village in which said association is situated, if such establishment and operation are at the time expressly authorized to State banks by the law of the State in question; and (2) at any point within the State in which said association is situated, if such establishment and operation are at the time authorized to State banks by the statute law of the State in question by language specifically granting such authority affirmatively and not merely by implication or recognition, and subject to the restrictions as to location imposed by the law of the State on State banks. No such association shall establish a branch outside of the city, town, or village in which it is situated unless it has a paid-in and unimpaired capital stock of not less than $500,000: *Provided*, That in States with a population of less than one million, and which have no cities located therein with a population exceeding one hundred thousand, the capital shall be not less than $250,000: *Provided*, That in States with a population of less than one-half million, and which have no cities located therein with a population exceeding fifty thousand, the capital shall not be less than $100,000."

Paragraph (d) of section 5155 of the Revised Statutes, as amended (U.S.C., title 12, sec. 36), is amended to read as follows:

"(d) The aggregate capital of every national banking association and its branches shall at no time be less than the aggregate minimum capital required by law for the establishment of an equal number of national banking associations situated in the various places where such association and its branches are situated."

Note: This is Section 23 of the Banking Act of 1933, better known as the Glass-Steagall Act. This section permits each state to set the minimum conditions required for bank branching by both state and nationally chartered banks, overturning the rules set out by the McFadden Act of 1927. The text of the entire law can be found here.

C Branch and bank balance sheets

Once Congress passed the Glass-Steagall Act, the Federal Reserve began collecting statements of condition for national bank *branches* at the same frequency as their bank-level call reports. They also began tracking *state* member bank *branch* balance sheets after the FDIC requested help tracking the phenomenon in 1937.[19] This level of detail on branch-level operations is not available in modern banking data, which make these data unique in the history of U.S. banking.

After 1937, there was inconsistency in the preservation of branch-level data for state and national banks. Branch-level data for national banks was only preserved through 1938, while state member banks' branch balance sheets became significantly less detailed in later years.[20] As a result, there is only one regulatory call date for which both state and national member banks have extant branch-level reports of condition in comparable detail: 1937.

The Federal Reserve's branch-level records of condition document each branch's location, the name of its parent bank network, and separately reported its assets and liabilities. Since most bank branches maintained records of liabilities and loans originated at each office, completing these branch-level statements was straightforward (Chapman and Westerfield, 1942).

Branch-level and bank-level balance sheets were very similar in many ways. Most of the branch-level balance sheet categories correspond directly to items reported at the bank level. For example, branches separately report their time certificates of deposits and savings accounts (corresponding to items 1(a) and 2 on Schedule K of the bank-level call report), but these reflected funds collected specifically at that location. Other categories were more aggregated at the branch level, such as Christmas accounts (item 1(c) on Schedule K) and postal savings (item 3 on Schedule K), which were combined into a single "other time deposits" category. Table C.1 provides a detailed crosswalk between branch and bank-level reporting categories.

There are three major departures between the two sets of balance sheets. The first is that branches did not include capital, so assets equal deposits plus miscellaneous liabilities (for instance interest collected but not earned). Similarly, branches typically did not maintain their own account with the Federal Reserve, so that category, along with other headquarters-specific duties like security purchases, were not frequently reported at the branch level. We note that bank branches *did* conduct interbank payments, which is reflected in the "due from (to) other bank" categories, defined as the gross volume of each office's assets (liabilities) currently involved in interbank transactions. We refer to these cross-bank transfers, visible for both branches and unit banks, as "external capital markets" because they moved funds between firms.

[19] See this 1937 Federal Reserve memo on its decision to ask state member banks for these records.

[20] The lack of branch data for national banks after 1938 is consistent with the declining number of reels held for these records, alongside an increase in frequency of calls in FRASER, see this summary.

The third and most unusual category on the branch balance sheet is an item that cannot exist on a unit bank balance sheet. That is the "from (to) rest of network" categories, defined as the net volume of each office's assets (liabilities) currently involved in *intra*bank transactions. Unlike interbank transactions, these must sum to zero for each branch because it either is a net donor or receiver of funds from its fellow branches. For example, assume a bank moves $10 from Branch A to Branch B. Branch A is lending its deposits elsewhere in the network, so it would report having $10 of funds due from the the rest of the network as an asset and zero funds due to the rest of the network. Branch B would have the opposite, as it lent zero funds to Branch A but owes $10 to Branch A, yielding $0 in the funds due from the the rest of the network asset category but $10 in the funds due to the the rest of the network category. When summing over the entire network, these "internal capital markets" will sum to zero as well. Bank branches typically tracked these transfers alongside their interbank accounts per FDIC deposit assessment guidelines (Langston, 1940). Because these transfers total to zero across an entire network and are unavailable to unit banks, they also keep individual branch balance sheets from being directly equivalent to bank-level categories.

Table C.1: Conversion between branch and bank call report categories

Branch category	Bank equivalent
Loans on real estate	Schedule E item 6
All other loans including rediscounts	Total loans minus the other two categories
Overdrafts	Summary line 2
Total loans	Summary line 1
US government and other securities owned	Summary line 3 plus 4
Banking house	Summary line 6-1
Furniture and fixtures	Summary line 6-2
Total house furniture fixtures	Summary line 6
Cash	Schedule I line 6
Checks and other cash items	Summary line 10, summary line 11
Due from head office or other branches	NA
Due from other banks including exchanges for clearing house	Summary line 9 less Schedule I item 6 (cash)
Other assets	Could be securities borrowed (line 12), other real estate owned (line 7), reserve with Federal Reserve bank (line 8)
Total assets	Total assets*
Checks and letters of credit outstanding	Schedule J item 7 ("transit account")
Total demand deposits except bank deposits	sum below
Individual demand deposits	Schedule J item 1
Certificates of deposit–demand	Schedule J item 1
State, county, and municipal demand deposits	Schedule J item 3
Other demand deposits excluding US	Schedule J item 5
Total time deposits including postal savings	sum below
State, county, and municipal time deposits	Schedule K item 4
Total savings pass book accounts	Schedule K item 2-1
Total savings pass book time deposits	Schedule K item 2-2
All other time deposits, including postal savings	Schedule 1a, 1b, 3 of Schedule K
Due to head office, or to other branches	NA
Due to other banks	Schedule J item 4-6 plus Schedule K Items 5-7
US deposits other than postal savings	Schedule J item 2
Total deposits	Summary line 18c
Other liabilities	Could be summary lines 19-30
Total liabilities	Total liabilities, less capital account*

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