# Examining the Examiners: Bank Supervision during the Great Depression

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**Abstract**

In the 1920s, Virginia State bank supervisors grew concerned about overreliance on interbank borrowing and began monitoring banks' short-term funding practices. Using newly digitized data from bank examination reports, we study the role examiners play and show that stricter supervisory standards reduced the volume of interbank borrowing. Banks that relied on interbank borrowing were more likely to fail during the Great Depression, suggesting that supervisors accurately identified key financial risks. Overall, we highlight the role of supervisory bank examinations in promoting banking sector stability.

**Keywords:** Bank Examination, Interbank Borrowing, Habitual Borrowers, Banking Crisis, Great Depression

**JEL classification:** G21, G28, N22

# 1 Introduction

The effectiveness of bank supervision is under scrutiny, with key policymakers advocating a shift toward a more risk-based framework that emphasizes material, measurable financial risks (Bowman, 2025). At the same time, disagreement persists over how best to structure the supervisory process, with banks and regulators often diverging on the appropriate balance between examiner discretion and standardized metrics. While policymakers and researchers widely acknowledge the importance of supervision, there is little empirical evidence showing the actual effect of supervision on banks, and even less is known about what examiners do or whether their subjective expertise truly improves the safety and soundness of the financial system. Using newly digitized data, this study provides evidence on the consequences of examiner-driven supervision.

Several challenges limit existing studies. First, supervisory data is confidential, making it difficult to determine the quantitative and qualitative criteria examiners use and how banks respond to their assessments. Second, troubled banks generally receive more supervisory attention, creating the appearance that intensive supervision leads to problems. Given these difficulties, previous studies have estimated the relationship between supervision and bank performance using general proxies for supervisory attention, such as the number of examinations, the distance from supervisory offices, and the number of hours spent on bank examinations.

This paper takes a historical perspective to overcome these limitations by studying the Virginia State Banking Department's introduction of enhanced supervisory requirements in the 1920s. At the time, regulators grew concerned that an increasing number of banks had become dependent on interbank borrowing to manage liquidity shortfalls. The rapid rise in "habitual" borrowing was viewed as a sign of financial weakness and a potential threat to the stability of the banking system. In 1922, the Virginia State Banking Department introduced a *qualitative assessment* of habitual borrowing behavior during on-site bank examinations. The assessment was designed to reduce both the overall amount of interbank borrowing and the incidence of habitual borrowing behavior. The examiners started recording the habitual borrowing status of each bank on an annual basis.

The behavior of Virginia state banks under enhanced supervisory requirements provides a unique setting to examine the effectiveness of bank supervision. First, we use publicly available call reports and bank examination records to document, for the first time, the sustained growth of interbank borrowing as a funding strategy among state banks in the early 1920s. Conditional on using interbank borrowing for liquidity needs, habitual borrowers exhibited persistently elevated

borrowing levels, highlighting a strong correlation between the frequency and intensity of borrowing.

Second, the banking environment at the time allows us to examine whether supervisory bank examinations affected banking stability. Understanding this relationship is challenging because supervisors tend to focus more on troubled institutions that are already at higher risk of failure. To address this, we exploit the introduction of enhanced supervisory standards in 1922, which required examiners to classify banks as habitual or non-habitual borrowers. We study how examiner monitoring differentially influenced the behavior of habitual borrowers and assess how effectively supervisors carried out their mandate. Notably, supervisors did not increase examination frequency or extend examination hours during this period. The consistency of supervision across banks allows us to better isolate the relationship between examinations and bank distress.

We begin by examining how examiners' monitoring of habitual borrowing behavior influenced the stability of the banking system. We compare the balance sheet ratios of banks identified as habitual borrowers to those of non-habitual borrowers before and after the introduction of this classification. Additionally, we assess whether banks labeled as habitual borrowers continued to rely heavily on correspondent borrowing in the year following their assessment using a panel regression design. Lastly, we compare failure outcomes of habitual borrower and non-habitual borrower banks during the Great Depression.

For this study, we construct several datasets. First, we collect state call reports from 1920 to 1933. The state banking department required banks to file condition reports covering basic balance sheet information four times a year, with the June call included in its published annual report. Second, we collect state bank examination reports from 1922 to 1932, which record soft information based on examiners' expertise and judgment. Specifically, we use data on whether a bank was classified as a habitual borrower after examiners reviewed each bank's borrowed funds. We rely on balance sheet data from the annual report because it provides standardized data for all banks at the same time, reducing concerns about spurious differences due to seasonal or other time-related factors. Third, we utilize U.S. Census data that contain information on examiners including birthplace, residential address, age, occupation, banking experience, and community connections. We leverage these data to evaluate examiners' exposure to bank management practices. Lastly, we use the list of "Discontinued Banks" from the January 1935 edition of the Rand McNally Bankers' Directory to determine if and when each state-chartered bank failed during the Great Depression.

An independent contribution of this study is to document how supervisory judgment was

exercised at the examiner level. By mapping examiner directories to signatures in the examination reports, we identify individual examiners, their assignments, and titles for each bank-year observation. We then then link these records to demographic information from the decennial U.S. Census between 1920 and 1950. This allows us to document the geographic reach, experience, and professional backgrounds of examiners, revealing that they operated within relatively small regional clusters and often shared close professional ties with the institutions they oversaw. Incorporating this information helps us interpret heterogeneity in supervisory scrutiny and forms the basis for our later analysis of examiner-specific effects on supervision. This aspect of our study contributes a new dimension to the literature, which has largely been silent on the characteristics and roles of individual examiners due to longstanding data limitations.

Our first empirical finding is that habitual borrowing was a persistent feature of Virginia's banking system, even under increased supervisory scrutiny. When examiners first introduced the classification in 1922, 73 of 328 banks (22.3%) were designated as habitual borrowers. While this number declined over time, the percentage of habitual borrowers consistently fluctuated around 20% from 1922 to 1932. Among the 195 banks ever classified as habitual borrowers, 116 were flagged multiple times, and 32 were designated in more than half of the 10-year period. These facts suggest that once a bank relied on interbank borrowing, it was difficult to move away from it entirely. Habitual and non-habitual borrower banks operated with distinct business models, with habitual borrowers relying more on interbank funding and exhibiting different liquidity and investment patterns. These differences highlight the importance of studying the dynamics of supervision's effects in the long run, particularly in the lead-up to the most significant banking crises in history.

Second, enhanced supervision significantly reduced interbank borrowing, with habitual borrowers decreasing reliance on interbank funding by 92.6% in the first year and 66.8% throughout the sample period. Our estimates suggest that these banks partially offset the decline in interbank funding by an increase in deposit funding. There is also evidence that banks adjusted their balance sheets more broadly, although changes in investment and liquid asset holdings were not consistently significant. Using the habitual borrower status in 1929, we additionally compare the failure outcomes of habitual and non-habitual borrower banks during the Great Depression. Indeed, both the parametric and semi-parametric survival analysis imply that habitual banks were more likely to fail during the Great Depression – a trend that accelerated as the crisis deepened.

Our findings speak directly to ongoing debates about the design and effectiveness of bank

supervision. Recent discussions among policymakers and financial institutions highlight a divide over how best to balance examiner judgment with standardized, risk-based oversight.[1] Critics argue that supervision has become overly subjective and inefficient, while others contend that examiner discretion remains essential to identifying emerging risks. Our results suggest that subjective assessments by examiners contained meaningful predictive information: banks flagged as habitual borrowers were indeed more likely to fail during the Great Depression. This evidence supports the view that examiner expertise, though qualitative, can play a vital role in promoting financial stability.

This paper contributes to several strands of literature in financial intermediation. First, it adds to the research on banking panics during the Great Depression. Many studies examine the causes of widespread bank failures, finding that bank runs reflected a rational and predictable process of market discipline. Depositors withdrew funds from banks with balance sheet characteristics indicating fundamental weaknesses (Calomiris and Mason, 1997; Calomiris and Mason, 2003a; Calomiris and Mason, 2003b). Other studies focus on the role of monetary policy in Depression-era bank runs (Carlson et al., 2011; Richardson and Troost, 2009) or how regulations and supervision affected failures (Mitchener, 2005; Carlson et al., 2009; Jaremski and Wheelock, 2020; Jaremski and Elbourne, 2022). Lastly, several studies show that stigma contributed to the severity of banking panics during this period (Anbil, 2018; Vossmeyer, 2019). We contribute to this literature by examining how supervisory bank examinations influenced the banking crisis of the Great Depression.

Second, our paper relates to the growing literature on bank supervision and its effects on financial stability. However, this literature is constrained by the confidentiality of the examination process. To address this, prior studies have exploited variation in supervisory attention, such as the frequency of inspections or the closure of regulatory offices. These studies find that onsite supervision improves bank efficiency and performance (Barth et al., 2013; Rezende and Wu, 2014; Wilson and Veuger, 2017), reduces risk-taking, leverage, and failures (Kandrac and Schlusche, 2021; Gopalan et al., 2017; Hirtle, Kovner, and Plosser, 2020, Correia et al., 2025), and positively affects lending allocation and the real economy (Agarwal et al., 2014; Granja and Leuz, 2017; Bonfim et al., 2020; Passalacqua et al., 2020). Our analysis contributes to this work by shedding light on the examiners themselves – an institutional dimension that has remained largely unexamined due to data limitations. In particular, we build on recent work that uses examiner-specific insights

[1]See Bank Policy Institute's "Better Bank Supervision" campaign at `https://betterbanksupervision.com`.

to understand how supervision shaped bank responses during systemic episodes (Jaremski and Elbourne, 2022; Jaremski and Wheelock, 2020).

Third, we add to prior works studying the information content in bank examination reports. One strand of literature focuses on detailed information regarding bank networks and their impact on systemic risk (Calomiris and Carlson, 2016; Mitchener and Richardson, 2019; Anderson et al., 2019; Anderson et al, 2022). The other studies use quantitative information provided by examiners to study banks' risk management (Calomiris and Carlson, 2017, 2022, 2023). While these studies highlight the informational value of examination reports, they use the reports mainly to measure private information provided by examiners rather than evaluating the supervision process itself. In contrast, we study the information provided by bank examiners over a decade leading up to the Great Depression and directly assess the effectiveness of bank supervision on stability outcomes.

Lastly, our paper contributes to research on stigma and its impact on banking stability. Existing studies show that discount window stigma exacerbates liquidity problems, leading central banks to create alternative lending facilities (Armantier et al., 2015; Armantier et al., 2020; Carlson and Rose, 2017). Several studies also find that stigma worsened banking panics during the Great Depression (Anbil, 2018; Vossmeyer, 2019). While this literature focuses on stigma from investors and depositors, we examine the role of supervisory stigma, assessing how being flagged by regulators affected banks' financial stability.

The remainder of the paper is organized as follows. Section 2 presents institutional background on bank examinations and supervision during the 1920s. Section 3 describes data and summary statistics on the sample of Virginia state banks. Section 4 examines the role of bank examiners, documenting their backgrounds, assignment patterns, and influence on the supervisory process. Section 5 outlines our econometric approach and presents our main results. Section 6 concludes.

## 2 Background and Institutional Details

This section examines two key aspects of Virginia's banking sector in the 1920s and 1930s: (1) overreliance on interbank borrowing, which supervisors viewed as a sign of weak fundamentals, and (2) supervisory bank examinations, which required examiners to oversee poorly performing banks and submit recommendations to improve stability.

### 2.1 Overdependence on Interbank Borrowing

During the National Banking Era, the banking system experienced seasonal spikes in loan interest rates and periodic banking panics. Increased demand from the agricultural sector for currency and credit during the spring planting and fall crop-moving seasons led to seasonal fluctuations in short-term interest rates, pushing interest rates up and reserve-to-deposit ratios down. These forces weakened the banking system and caused money supply contractions precisely when demand for money was highest (Kemmerer, 1910).

The interbank borrowing system developed as a means for banks to accommodate these seasonal liquidity pressures. Rural banks relied on correspondents in financial centers to fill funding gaps through interbank deposit balances and direct borrowing. When rural banks faced deposit outflows and strong credit demand, they initially met liquidity needs by drawing down deposits held at correspondents. However, once those balances were exhausted, they turned to short-term borrowing. To secure a credit line, respondents were required to maintain compensating balances with lending correspondents, typically amounting to 20 to 25 percent of their seasonal borrowing levels. While correspondents paid 2 percent interest on interbank balances, rural banks paid around 6 percent to borrow funds. Many banks borrowed rather than liquidate loans or sell securities, as doing so would result in losses (Redenius and Weiman, 2020).

Interbank borrowing commonly took the form of "notes and bills rediscounted" and "bills payable." Banks could borrow from another institution by posting a loan or other security as collateral (bills payable) or by selling a loan to another bank at a discount (rediscounts). While both instruments were widely used, increased reliance on bills payable signaled financial weakness. Banks resorted to bills payable when they could not raise sufficient cash by rediscounting eligible commercial paper. Since bills payable were often a last-resort funding option, frequent reliance on them was seen as a sign of deteriorating financial conditions (Gruchy, 1937).

Interbank borrowing became an increasingly common liquidity management tool in the late 1910s and early 1920s. Before the Federal Reserve System was established, state banks primarily held interbank deposits and withdrew interbank balances to maintain liquidity. After its founding, however, banks increasingly borrowed from other banks to cover deposit withdrawals and bolster cash positions. More banks took on substantial short-term loans from their correspondents as a result, deepening their reliance on interbank credit.

Interbank borrowing grew rapidly among Virginia state banks, particularly between 1917 and

1921. As shown in Figure 1, the number of banks reporting positive interbank borrowing balances increased significantly during this period, rising from 71 banks in 1917 (25% of banks) to 186 banks (56% of banks) by 1921. This rapid growth highlights the adoption of interbank borrowing as a crucial liquidity management tool in response to seasonal funding pressures and broader economic demands.

The total amount of interbank borrowing also expanded sharply during these years, underscoring the heightened reliance of banks on short-term borrowing. Figure 2 shows that aggregate interbank borrowing rose from roughly $1.7 billion in 1917 to a peak of around $14 billion by 1921. Correspondingly, the fraction of interbank borrowing relative to bank capital surged from about 12% in 1917 to 56% percent by 1921, indicating a substantial deepening of banks' dependence on borrowed liquidity.

By the early 1920s, state bank regulators became concerned about the risks of excessive interbank borrowing. One issue was the prolonged reliance on borrowed funds, as many banks borrowed continuously rather than on a short-term, seasonal basis. Regulators viewed these habitual borrowers as a particularly concerning signal of weakness. More importantly, they were alarmed by the growing number of banks borrowing through bills payable. In response, regulators introduced new guidelines emphasizing a greater "reluctance to borrow" and placed stricter oversight on its use. Beginning in 1922, examiners recorded whether borrowing banks were habitual borrowers, formalizing supervisory attention on the issue.

### 2.2 Bank Examination and Supervision

An official system of bank examination was first introduced in 1910. Bank supervision relied on examinations to ensure compliance with legal requirements. Examination reports contained rich information about banks that was not included in the publicly released Call Reports. These reports provided detailed balance sheet data, including the composition of loans, securities, and deposits. They also covered broader aspects of bank operations, such as corporate ownership and governance, loan distribution and quality, real estate-related assets, and liability composition. Lastly, the reports included private assessments from examiners after reviewing a bank's records.

The examination reports of Virginia state banks consisted of three sections. The first section contained a financial statement listing all asset and liability items. The second section provided details on the distribution and quality of key balance sheet components, such as principal loans, past-due notes, and cash items. The third section contained qualitative assessments of the bank's

condition, assets and liabilities, and business activities, requiring the examiner to apply subjective expertise.

For our analysis, the most relevant information pertains to interbank borrowing. Examiners closely monitored money borrowed by banks as an indicator of their credit position. The Virginia Bank Act limited interbank borrowing to the bank's capital and surplus and capped pledged collateral at 150 percent of the amount borrowed. If a bank violated these rules, the commissioner of banking ordered compliance. As regulators grew increasingly concerned about overreliance on short-term borrowing, examiners were instructed to assess whether each bank is a habitual borrower.

Examination reports were analyzed by the State Banking Department, which then sent the results to banks along with recommendations for improving operations. Banks were expected to modify unsound policies promptly and notify the department of their compliance. However, examiners lacked the full authority to enforce changes, as continuous borrowing was not explicitly prohibited under the State Bank Act; only compliance to recommendations that enforce provisions of the State Bank Act was mandatory. These rules had important implications: banks were required to comply with recommendations regarding the amount of interbank borrowing, but they were not required to comply with recommendations regarding the frequency of such borrowing. As such, the effect of discouraging frequent borrowing is ex ante unclear and remains an empirical question.

# 3 Data and Descriptive Statistics

## 3.1 Data Sources

We collect information on Virginia state banks from three sources. First, we use bank Call Reports from 1917 to 1935. The state banking department required banks to submit a report of condition covering basic balance sheet information four times a year and published the June balance sheet in its annual report. After submitting their balance sheets to regulators, banks were also required to publish select line items in a local newspaper, allowing depositors to monitor their condition. A key advantage of the Call Report is that balance sheets were collected for all banks at the same point in time, helping control for seasonal or other time-related factors. Second, we collect Virginia state bank examination reports from 1922 to 1932. These reports were written twice a year by field examiners hired by the Virginia state banking department. We collect and codify the latest

report available each year. Lastly, we use the January 1935 edition of the *Rand McNally Bankers' Directory* to determine bank outcomes following the Great Depression. The number of state banks declined from 315 in December 1929 to 202 in December 1933. We use the list of discontinued banks to identify whether a bank failed or merged with another institution to avoid failure.

To identify individual bank examiners, we begin with the directory of examiners listed in the *Rand McNally Bankers' Directory*, which reported the names of state supervisory personnel. We then extract examiner names and titles directly from the examination reports by matching examiner signatures to the names listed in the directory. This allows us to track examiner assignments over time and identify the lead examiner for each bank-year observation. Finally, we collect demographic information (age, hometown, and employment history) for all examiners using the decennial U.S. Census from 1920 to 1950, accessed through Ancestry.com.

### 3.2 Habitual Borrowing in the 1920s

Habitual borrower status was recorded by Virginia bank examiners starting in the 1922 examination reports. When supervisory attention was first introduced, 73 of 328 banks (22.3%) were classified as habitual borrowers (Figure 3). The number and fraction of habitual borrower banks declined significantly in the early years of enhanced supervision, reaching 47 banks (13.9%) by 1924. Notably, however, habitual borrowing did not completely disappear despite the enhanced scrutiny.

Figure 4 depicts the locations of habitual borrower banks in 1922 and 1932, the beginning and end of our examination report sample. We show that habitual borrowers are distributed statewide, with a few counties within the Southwest, Central, and Valley regions exhibiting slightly higher concentrations. While the absolute number of habitual borrowers declined from 73 to 39 banks during this period, we do not find notable geographic trends in habitual borrower status across counties. Taken together, these facts imply that enhanced supervision was implemented uniformly throughout the state and that its effectiveness was limited across all areas.

Figure 5 illustrates the distribution of how often banks were flagged by examiners. The vast majority of state (non-member) banks in Virginia never became habitual borrowers, despite close to half of banks reporting positive interbank borrowing at least once during this decade. Among those flagged as habitual borrowers, 79 banks were designated only once, while 116 banks were classified as habitual borrowers on multiple occasions. More persistently, 32 banks were flagged by examiners in more than half of the available examination reports, and Farmers and Merchants Bank of Timberville was classified as a habitual borrower every year except 1927. These figures

highlight both the effectiveness and limitations of supervisory scrutiny. While habitual borrower classification was a soft regulatory tool rather than a formal penalty, it generally influenced bank behavior, leading many banks to adjust their borrowing practices to avoid repeated designation. However, the turnover in habitual borrower status suggests that some banks moved in and out of scrutiny, possibly due to fluctuating liquidity needs or the absence of a strict quantitative threshold for habitual borrowing. This variability underscores the challenges banks faced in managing their borrowing levels within the evolving supervisory framework.

We address the persistence of habitual borrower status more formally by examining the fraction of habitual borrower banks each year that had been flagged before. Indeed, between 60% and 80% of habitual borrower banks are repeat habitual borrowers. This fraction increases over time, providing further evidence that banks reliant on interbank borrowing struggled to reduce their dependence.

### 3.3 Descriptive Statistics

Table 1 presents summary statistics for key balance sheet characteristics of 2,483 non-habitual and 455 habitual borrower banks over the 1922 to 1931 period. During this time, bank regulators and depositors commonly evaluated liquidity, investment, and leverage metrics to assess bank soundness (Gruchy, 1937). Liquid assets include vault cash and reserves held in other banks, while investment refers to a bank's holdings of securities and longer-term loans.

Habitual borrower banks operated with substantially different balance sheet profiles. Importantly, they were far more leveraged: the average borrowing-to-capital ratio was 71.48% among habitual borrowers, compared with 25.88% for non-habitual banks. A similar pattern appears when scaling borrowing by deposits (33.52% versus 5.80%). These gaps are large and statistically significant and indicate that examiners correctly identified banks that relied heavily on interbank funding.

In terms of investment activity, habitual borrowers held considerably larger investment portfolios relative to their deposit base. Their average investment-to-deposits ratio was 262.30%, almost double that of non-habitual banks (131.33%). At the same time, habitual borrowers exhibited lower equity-to-deposits ratios and modestly lower profitability, consistent with more aggressive balance sheet strategies supported by short-term funding rather than stronger capital buffers.

Liquidity positions are broadly similar across the two groups. Mean liquid assets to deposits differ only slightly (17.56% for non-habitual banks versus 18.15% for habitual banks) but habitual banks display greater dispersion in liquidity ratios, suggesting more variable liquidity management.

The descriptive statistics also highlight differences in borrowing reliance and supervisory exposure. Habitual borrowers were much more likely to report any interbank borrowing at all (82% versus 34%), reinforcing that these banks relied more consistently on correspondent credit lines. They were also examined by a slightly larger number of examiners on average, which is consistent with heightened supervisory attention to institutions exhibiting persistent reliance on borrowed funds.

Taken together, these patterns suggest that habitual borrower banks followed distinct funding and investment strategies prior to the Great Depression, relying heavily on interbank credit to support larger investment portfolios despite holding weaker capital positions. This combination of high leverage and substantial borrowing made them more exposed to funding disruptions during periods of financial stress.

# 4 The Role of Bank Examiners

Bank examiners play a central role in shaping supervision. Understanding who these examiners were and how they conducted their oversight activities is critical for interpreting both the implementation and effects of enhanced supervision. These individuals were not abstract bureaucrats but rather professionally and geographically close to the banks they examined. Many had prior experience as bank officers and continued to work in the financial sector after their tenure. The proximity of their residences to assigned banks, coupled with repeated exposure to specific institutions, suggests that supervision was often carried out by examiners with intimate familiarity with local banking practices.

## 4.1 Who Were the Examiners?

Figure 6 shows the number of state bank examiners employed by the Virginia Banking Department from 1920 to 1932. In total, 22 individuals served as examiners throughout this period, under the leadership of two chief examiners: Fitzhugh Briggs Richardson (1919–1922) and Myron Edison Bristow (1923–1935).[2] The average number of examiners per year was ten, rising from six in 1920

[2]See Figure A.1 for their appearance in the *Southern Banker* magazine.

to twelve in 1932. This modest expansion likely reflected both the growing complexity of the state banking system in the 1920s and the surge in bank failures during the early years of the Great Depression. It may also have been partly driven by the department's shift to assigning multiple examiners per bank.

Next, we document the demographic characteristics of Virginia bank examiners during this period. The average age of an examiner was approximately 40, ranging from 26 to 51 (Figure 7, Panel (a)). This age distribution remained relatively stable throughout time. In terms of professional backgrounds, Panel (b) of Figure 7 traces the occupations of examiners using census data. In 1920, about half had worked in the banking sector, often as presidents (CEOs) or cashiers (CFOs), while others held administrative or clerical roles. By 1930, about half of the examiners were still serving in that capacity, and many of the rest had taken on bank officer roles. Panels C and D follow their careers into the 1940 and 1950 censuses. In other words, many examiners were also bank managers, giving them a strong grasp of bank management and sound banking practices. A large fraction remained in banking, suggesting that the examiner role was part of a broader professional trajectory rather than an isolated public service position. Finally, we calculate the physical distance between examiners' residences and the banks they examined. The average distance was 67 miles, with some located in the same town and others as far as 366 miles away. This proximity likely fostered repeated interactions and a deeper understanding of local bank conditions.

### 4.2 How Did Examiners Shape Supervision?

In this subsection, we document how bank examiners interacted with and shaped the supervision process in practice. First, we analyze examiner team structures. In Figure 8, we plot the percentage of banks that were reviewed by a given number of examiners during the examinations.While most examinations were conducted by a single lead examiner in 1922, this began to shift over time. By 1926, 33 percent of banks were inspected by teams of two or more examiners, and by 1932, that share had risen to 67 percent. This structural change likely reflected the Virginia state banking department's evolving view that supervisory effectiveness could be improved through collaborative assessment.

We next turn to the assignment patterns of habitual borrower status. On average, each examiner handled 48 examinations in 1922 (median of 54), a number that dropped to 34 examinations in 1932 (median of 43.5), in part due to the increased examiner count. Among examiners who have

completed at least 50 examinations during the sample period, the percentage of banks flagged as habitual ranged from 6% to 32%. While some examiners were more likely to designate banks as habitual borrowers, the assignment patterns remain relatively consistent across years, with within-examiner changes typically ranging from 1% to 4%.

Figure 9 plots the geographic distribution of habitual borrower banks in 1922 and 1929, this time coded by the lead examiner responsible for each bank. We confirm that examiners tended to operate in relatively small geographic clusters and that the incidence of habitual borrower designations varied only modestly across examiners. Taken together, these patterns underscore the central role examiners played in shaping the implementation of enhanced supervision. Both the intensity and consistency of supervisory scrutiny were mediated through individual examiners.

# 5 Main Results

We study how enhanced supervision influences bank behavior by analyzing the inclusion of habitual borrowing in examination reports. Using annual data on each bank's habitual borrower status from 1922 to 1931, we directly quantify the impact of supervision on interbank borrowing and other balance sheet outcomes.

## 5.1 Impact of Supervision on Bank Behavior

Habitual borrowing was recorded for the first time in the 1922 examination reports. As this regulatory shift was unexpected and quickly implemented, it provides a quasi-experimental setting to study the causal effect of enhanced supervision. In the first part of our main analysis, we estimate a cross-sectional regression comparing banks that were flagged as habitual borrowers to non-habitual borrowers with positive levels of interbank borrowing. This allows us to isolate the effect of habitual borrower designation among banks that share similar funding models. If supervisory scrutiny effectively discouraged reliance on interbank borrowing, we would expect to see a relative decline in borrowing levels among habitual borrower banks following their classification. Beyond interbank borrowing, we also examine whether flagged banks adjusted other aspects of their balance sheets – such as deposits, investment, and liquid assets – in response to enhanced supervision. This analysis provides insight into the extent to which supervisory attention shaped bank stability in Virginia during this period.

Appendix Table A.1 reports summary statistics for habitual and non-habitual borrower

banks in 1922. Similar to the baseline statistics for the full sample, habitual borrowers exhibit higher investment, equity capitalization, and borrowing levels compared to non-habitual borrowers. Notably, the average borrowing to total capital ratio is over four times higher for habitual borrowers in 1922 (85.8% vs. 19.2%), a difference that narrows somewhat in the full sample (71.97% vs. 26.59%). Habitual borrowers also have lower liquid assets relative to deposits on average in 1922 (14.41% vs. 20.79%), whereas this difference disappears in the full sample (18.09% vs. 18.19%). Comparing the two tables highlights two facts: (a) habitual borrowers relied heavily on interbank borrowing to support elevated investment levels, and (b) despite reductions in borrowing following enhanced supervision, many banks continued to be classified as habitual borrowers throughout the decade. On balance, the distinct funding and investment approaches of these two groups underscore the importance of leveraging an exogenous shift in supervisory scrutiny to evaluate its causal effects.

We estimate the following regression:

$$Y_i = \alpha + \beta \text{Habitual}_i + X_i'\gamma + \epsilon_t \tag{1}$$

where $Y_i$ represents the percent change in the outcome variable of interest (interbank borrowing, total deposits, total equity, total investment, total liquid assets) or the return on assets for bank $i$. $\text{Habitual}_i$ is a binary indicator equal to 1 if the bank was classified as a habitual borrower in 1922 and 0 otherwise, and $X_i$ is a vector of 1922 bank characteristics (borrowing to capital ratio, investment to deposits ratio, liquid assets to deposits ratio, log total assets, and bank age) included to account for potential confounding factors. The coefficient $\beta$ captures the estimated effect of habitual borrower designation on the outcome variable.

Table 2 presents the estimation results. We find that enhanced supervision on interbank borrowing in 1922 led to a 92.6% decrease in interbank borrowing among treated banks relative to control banks, as indicated by the negative and statistically significant coefficient of -2.60 on the habitual borrower dummy in column (1). This suggests that habitual borrower designation imposed economically meaningful constraints on banks' ability and willingness to borrow. Columns (2) to (4) examine the broader impact of supervision on balance sheet adjustments. Habitual borrower status decreased total deposits by 8.3%, implying meaningful contractions in other funding sources. In terms of asset composition, we find further evidence of supervisory constraints affecting bank operations; investment decreased by 8.5%, although we do not find statistically significant changes in liquid assets. There is also no change in bank profitability. Taken together, these findings

indicate that supervision affected multiple aspects of bank operations in a contractionary manner, extending beyond interbank borrowing to influence liability structure and asset composition. These results are robust to removing banks headquartered in Richmond, a key Federal Reserve city (Table A.2). Moreover, our results do not change when we drop Federal Reserve member banks, which had different access to funding liquidity (Table A.3).

Second, we assess the impact of supervision by estimating a panel regression with bank and year fixed effects, leveraging the full sample period from 1922 to 1931. This specification allows us to analyze how being flagged as a habitual borrower affects a bank's interbank borrowing and other financial outcomes over time, controlling for unobserved bank-level characteristics and broader macroeconomic trends. If supervision had a persistent effect, we would expect banks to reduce interbank borrowing following their classification as habitual borrowers. Additionally, we may observe adjustments in liquidity management or capital levels in response to supervisory scrutiny.

We estimate the following regression:

$$Y_{it} = \alpha + \beta \text{Habitual}_{it} + X'_{it}\gamma + \delta_i + \lambda_t + \epsilon_{it} \tag{2}$$

where $Y_{it}$ represents the financial outcome of interest for bank $i$ in year $t$, such as interbank borrowing, liabilities, or asset composition. The key independent variable, $\text{Habitual}_{it}$, is an indicator for whether the bank was classified as a habitual borrower in year $t$. The vector $X_{it}$ includes time-varying bank-level controls, such as past borrowing intensity, liquidity ratios, and capital structure. Bank fixed effects ($\delta_i$) account for time-invariant heterogeneity across banks, while year fixed effects ($\lambda_t$) control for statewide macroeconomic conditions. Standard errors are clustered at the bank level to account for serial correlation in borrowing behavior over time.

Table 3 presents the estimation results from the panel regression. In line with the cross-sectional findings around the first introduction in 1922, column (1) confirms that banks classified as habitual borrowers experienced a significant and persistent decline in interbank borrowing. The estimated coefficient of -1.101 suggests that habitual borrower banks reduced their interbank borrowing by approximately 66.8% relative to non-habitual borrowers, reinforcing the view that supervisory scrutiny effectively constrained reliance on interbank funding. In contrast, we now observe a notable shift in the behavior of deposits. Column (2) suggests that habitual borrowers increased total deposits by approximately 5.0%, potentially reflecting an effort to replace lost interbank

funding with alternative sources. However, the effect is marginally significant at the 10% level. The effect on total equity, shown in column (3), is small and statistically insignificant, implying that banks did not significantly alter their overall leverage in response to supervision. Column (4) shows that habitual borrowers did not significantly change their investment holdings, suggesting no strong evidence that banks adjusted liquid assets in response to supervision. Column (5) indicates no changes in bank profitability. Our findings are robust to excluding banks headquartered in Richmond and Federal Reserve member banks (Tables A.4 and A.5).

Overall, we show that supervision led to a persistent and substantial decline in interbank borrowing. Aside from suggestive evidence on higher reliance on deposit funding, we do not identify any consistent patterns for asset reallocation or bank growth. These adjustments highlight the broader impact of supervision on bank operations beyond its immediate effect on interbank borrowing.

Given our summary findings on the constant fraction of habitual borrowers throughout the study period, the regression results suggest that habitual borrower banks may have been borrowing less but at an elevated frequency. Separately, we cannot directly rule out the possibility that banks actively managed their books to reduce period-end balances of interbank borrowing, which might obscure true borrowing frequency. While the transmission of supervisory recommendations and balance sheet adjustments may have been slower in the 1920s, distinguishing between genuine reductions in borrowing frequency and short-term window-dressing remains a challenge and may partially explain the mixed results.

### 5.2 Habitual Borrowing and Banking Stability during the Great Depression

In this section, we evaluate whether habitual borrowers in the years leading up to the Great Depression were more likely to fail during the crisis. We use time-to-event models to assess the survival outcomes of habitual versus non-habitual borrowers, controlling for observable characteristics such as bank size, liquidity, capitalization, and leverage. Specifically, we build upon methodologies in prior works that investigate distress during historical banking crises (Calomiris and Mason, 2003b; Richardson and Troost, 2009).

#### 5.2.1 Semi-Parametric Estimates

We begin with Cox proportional hazards regressions to assess whether habitual borrowing status between 1928 and 1929 predicts higher risk of bank failure during subsequent banking crises.

The Cox model is semi-parametric, leaving the baseline hazard unspecified while estimating the multiplicative impact of covariates on failure risk.

Figure 10 presents Kaplan–Meier survival estimates, showing cumulative survival probabilities for habitual and non-habitual borrower banks. The results reveal that most divergence in failure rates occurs within the first two years of the analysis period. Habitual banks experienced significantly higher failure rates starting in 1931 ($t = 1$), with their survival probabilities dropping sharply relative to non-habitual banks. This early divergence underscores the vulnerability of banks dependent on interbank borrowing, confirming supervisory concerns that habitual borrowing was indicative of underlying financial weakness.

Table 4, columns (1) and (2), present the results of Cox proportional hazards models, where the outcome is the time until bank failure and the primary independent variable is habitual borrower status in 1928–1929. We control for time-varying measures of bank risk that could independently affect failure outcomes (log total assets, liquid asset-to-deposit ratio, equity-to-deposit ratio, and borrowing-to-capital ratio). Specifically, controlling for the borrowing-to-capital ratio allows us to isolate the incremental hazard associated with habitual borrowing status (higher borrowing frequency) conditional on the overall level of borrowing.

The results indicate that habitual borrowers faced significantly elevated failure risk, with an estimated hazard ratio of $e^{0.528} \approx 1.70$. This result is both economically and statistically significant, implying that habitual borrowers about 70% more likely to fail than their non-habitual borrower counterparts. Bank size negatively predicts failure, while the borrowing-to-capital ratio positively associates with failure risk. Liquidity and equity ratios do not show significant associations in this specification, although the direction of their coefficients aligns with the economic intuition that higher liquidity and capitalization may have had protective benefits.

Column (2) extends the analysis by including county fixed effects. This specification is the most restrictive as it absorbs time-invariant county characteristics that could independently influence bank failure. The coefficient on habitual borrowing remains significant and rises markedly in magnitude, indicating that the detrimental effect of overreliance on interbank borrowing become clearer once persistent, county-level differences are accounted for.

### 5.2.2 Parametric Estimates

To assess robustness and explicitly model survival times, we estimate parametric survival models using a log-logistic accelerated failure time (AFT) specification. Unlike semi-parametric Cox models, parametric AFT models explicitly parameterize the distribution of survival times, providing direct interpretations of how covariates accelerate or decelerate the time to failure. Specifically, we utilize a log-logistic distribution, a standard choice in the literature given its flexibility in capturing increasing or decreasing hazard rates over time. The dependent variable is the log of the number of years until bank failure, and the key independent variable is habitual borrower status in either 1928 or 1929.

Table 4, columns (3) and (4), present the parametric results. Both specifications control for time-varying bank characteristics that may independently affect bank stability. In column (3), the coefficient on habitual borrower status is negative and statistically significant, implying that habitual borrowers experienced significantly shorter survival times. The exponential of this coefficient (-0.54) suggests that habitual borrowers survived approximately 41% less time than non-habitual borrowers. Consistent with the semi-parametric results, larger banks tended to survive longer while banks with how borrowing levels experienced shorter survival times. Column (4) incorporates county fixed effects; we find that the negative effect of habitual borrowing on survival time remains robust, albeit being marginally weaker statistically.

Taken together, the semi-parametric Cox proportional hazards models and the parametric accelerated failure time models consistently show that habitual borrowers faced significantly higher failure risk during the Great Depression. Regardless of whether we flexibly estimate the baseline hazard or explicitly impose a parametric form on survival times, our results reveal that banks engaging in habitual borrowing were more prone to distress even after controlling for overall borrowing levels and standard balance sheet ratios. This finding underscores that supervisors successfully identified a critical dimension of banking risk – borrowing frequency and persistence – that extends beyond traditional regulatory metrics and highlights the importance of qualitative supervisory assessments in detecting financial vulnerabilities.

## 6 Conclusion

Recent policy discussions have called for a shift toward risk-based supervision. This approach emphasizes quantifiable metrics such as capital adequacy and liquidity, while reducing reliance on

examiner discretion. Industry groups have supported this view, arguing that current supervisory practices divert attention from core financial risks and impose excessive compliance costs. Although the importance of supervision is widely recognized, there is limited empirical evidence on its actual impact. Even less is known about the specific role of examiners or whether their professional judgment enhances institutional soundness and financial stability.

This paper addresses this challenge by taking a historical approach. We examine how the introduction of enhanced supervisory requirements in the early 1920s influenced Virginia state banks' behavior leading up to and during the Great Depression. At the time, supervisors were concerned about banks' overreliance on interbank borrowing and instructed examiners to classify banks as habitual borrowers. Using novel data on bank balance sheets and examination reports, we analyze how monitoring affected interbank borrowing behavior. We find that supervisory oversight reduced the number of habitual borrowers and the overall volume on interbank borrowing, but was not able to eliminate habitual borrowing behavior altogether. Additionally, we show that habitual borrowers were more likely to fail during the Great Depression, suggesting that enhanced supervision helped identify signals of distress and mitigated bank failures. Overall, we highlight the role of supervisory bank examinations in maintaining financial stability.

Our results contribute to ongoing debates surrounding the optimal implementation of bank supervision. Using long-term historical data, we show that banks respond clearly to supervisory guidelines by reducing borrowing levels on end-of-period balance sheets. However, the continued presence of habitual borrowers throughout the sample suggests limited success in changing banks' underlying reliance on frequent interbank borrowing. We identify a key trade-off between setting flexible guidelines during examinations and prescribing precise recommendations on measurable activity.

We also speak to current topics on transparency in bank supervision. Greater disclosure of examination outcomes and processes, even after delays, could help banks and market participants more rapidly recognize and respond to emerging risks. Enhanced transparency could help examiners and regulators issue clearer and more impactful recommendations. At the same time, regulators would need to carefully weigh the benefits of such transparency against concerns about stigma and market sensitivity, as well as the effectiveness of supervision.

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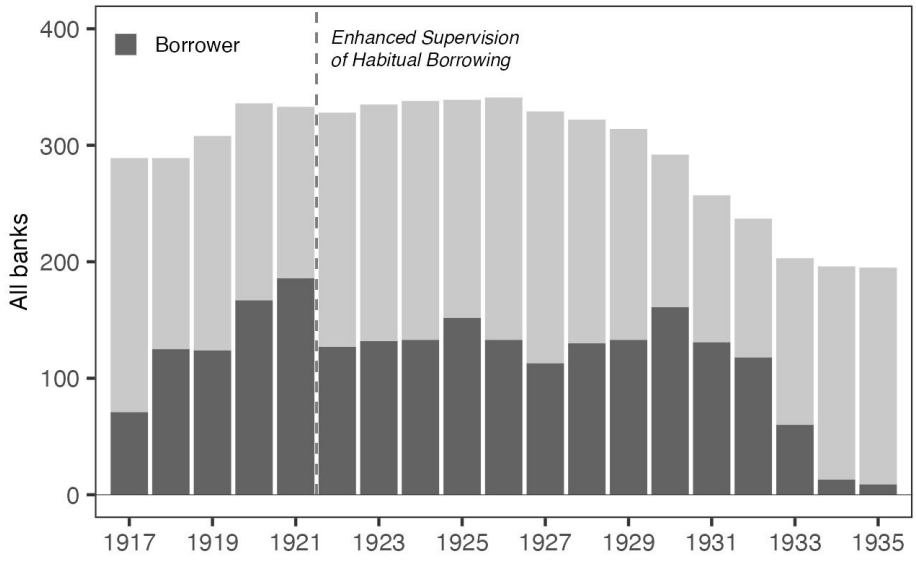
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**Figure 1:** Interbank Borrowing Network in Virginia



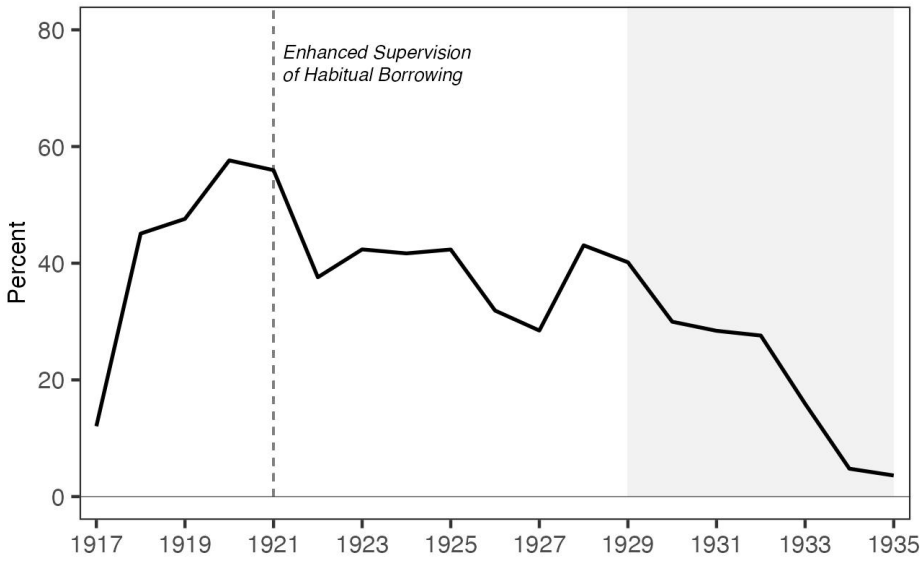

*Notes:* This figure plots the number of Virginia state banks that utilized interbank borrowing between 1917 and 1935. "Borrower" refers to bank that reported positive interbank borrowing balances.
*Source:* Call Reports.

**Figure 2:** Interbank Borrowing and Supervision

(a) Borrowing Amount

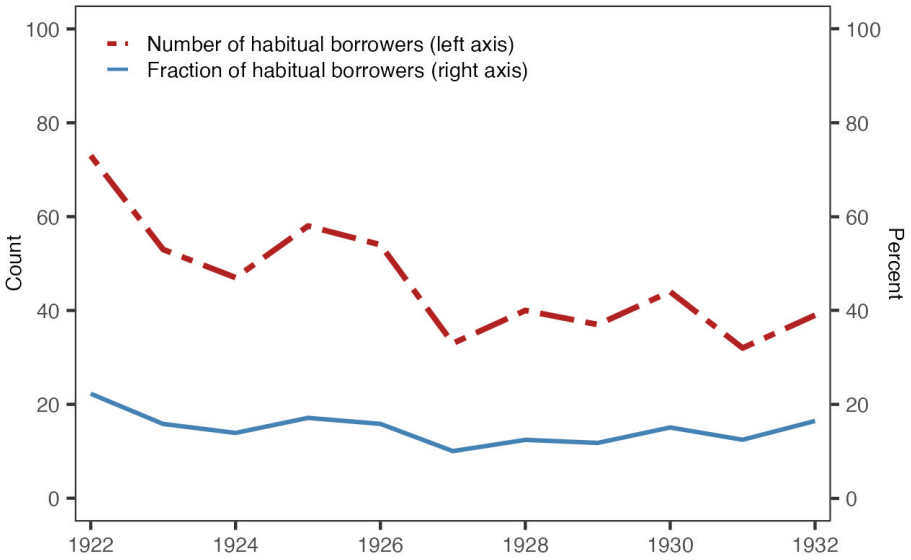



(b) Reliance on Interbank Borrowing




*Notes:* This figure plots the amount of interbank borrowing (top panel) and the system-wide interbank borrowing to bank capital ratio (bottom panel) among Virginia state banks. The sample period is from 1917 to 1935. The shaded area represents the Great Depression.
*Source:* Call Reports.

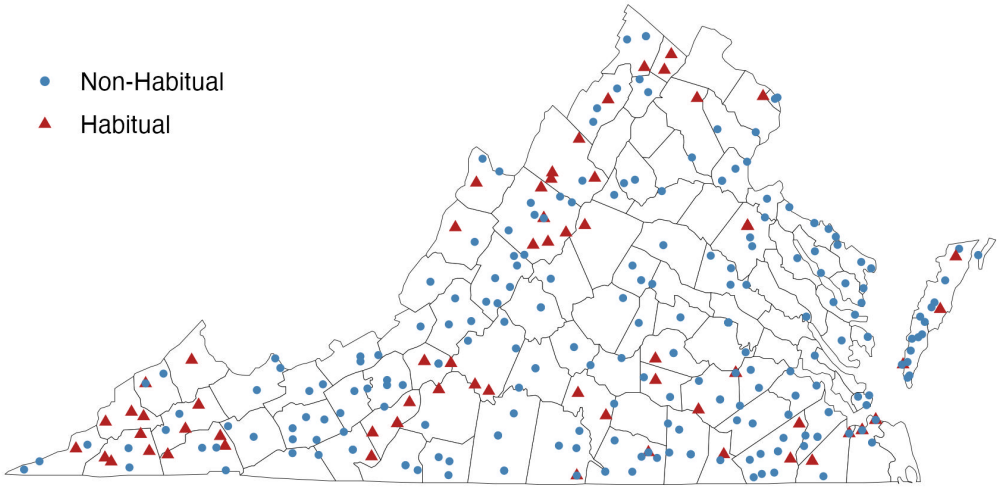
**Figure 3:** Evolution of Habitual Interbank Borrowing



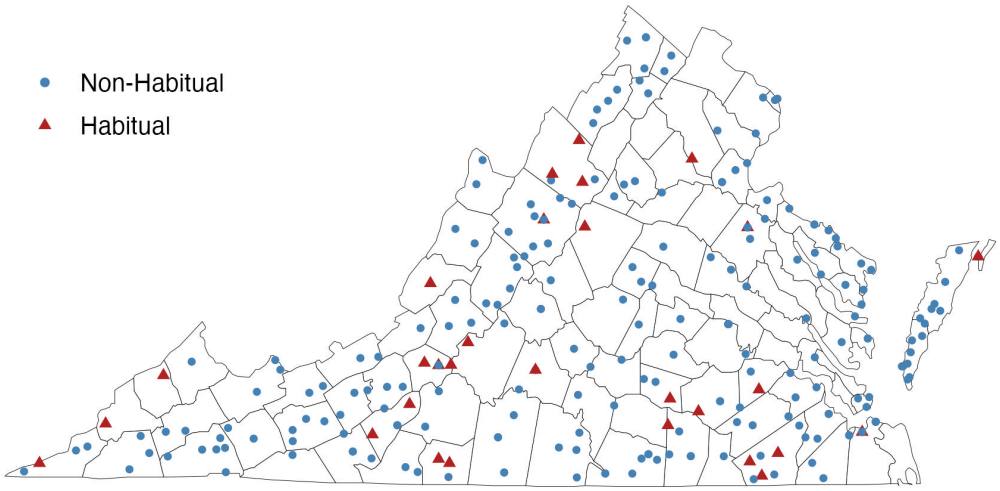

*Notes:* This figure plots the evolution of habitual borrowing leading up to the Great Depression. We show the total number of habitual borrowers, identified through annual bank examinations, as well as the fraction of Virginia state banks that are habitual borrowers. The sample period is from 1922 to 1932.
*Source:* Call Reports, bank examination reports.

**Figure 4:** Geographic Distribution of Habitual Borrowers

(a) 1922

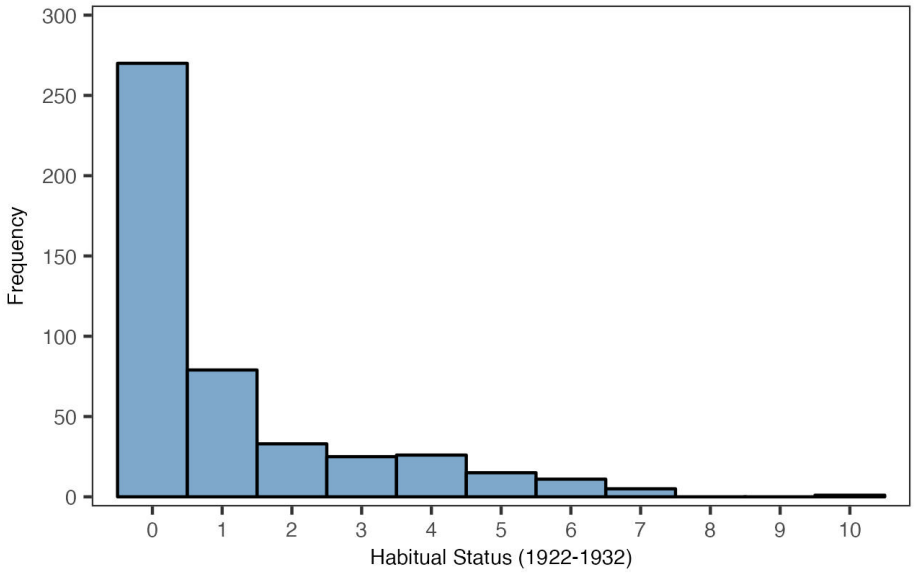



(b) 1929



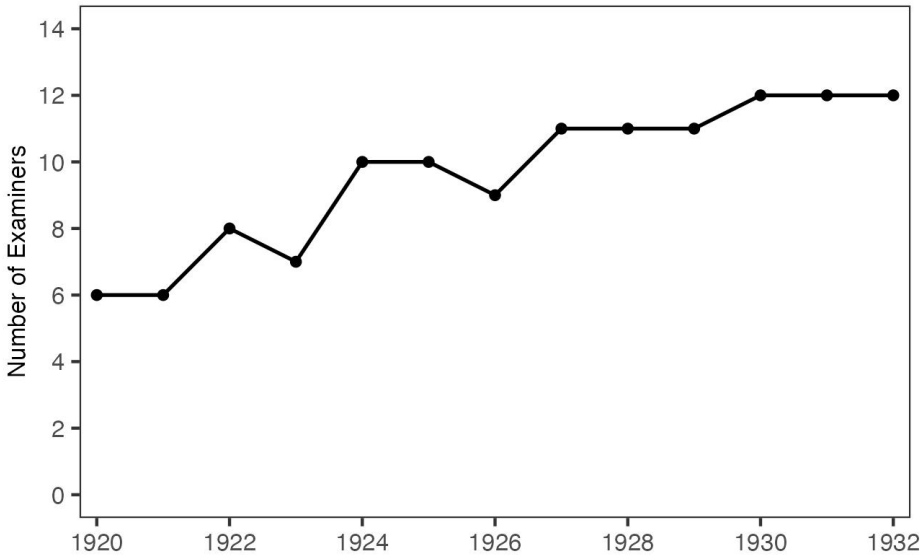

*Notes:* This figure plots the headquarter location of habitual and non-habitual borrower banks in 1922 and 1929.
*Source:* Call Reports, bank examination reports.

**Figure 5:** Persistence of Habitual Borrowing




*Notes:* This figure plots a histogram of the number of times a bank is classified as a habitual borrower between 1922 and 1932.
*Source:* Call Reports, bank examination reports.

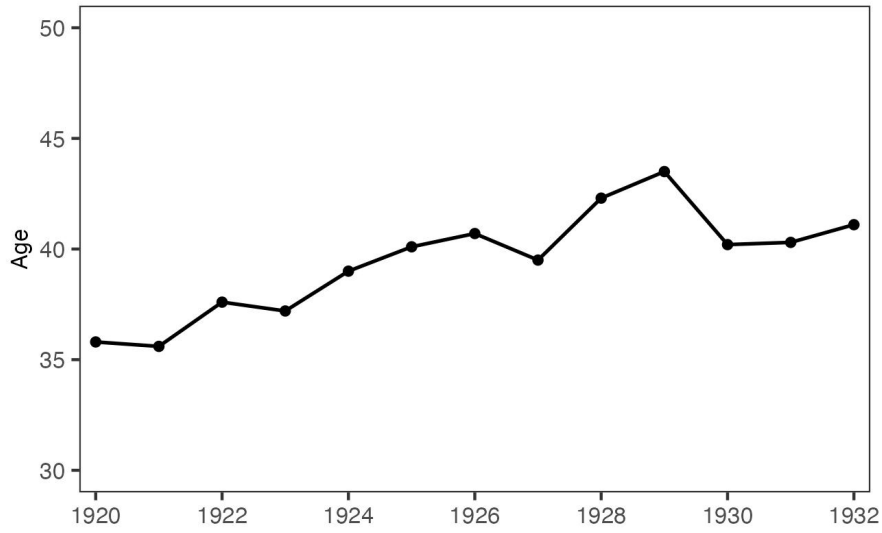
**Figure 6:** Number of Bank Examiners



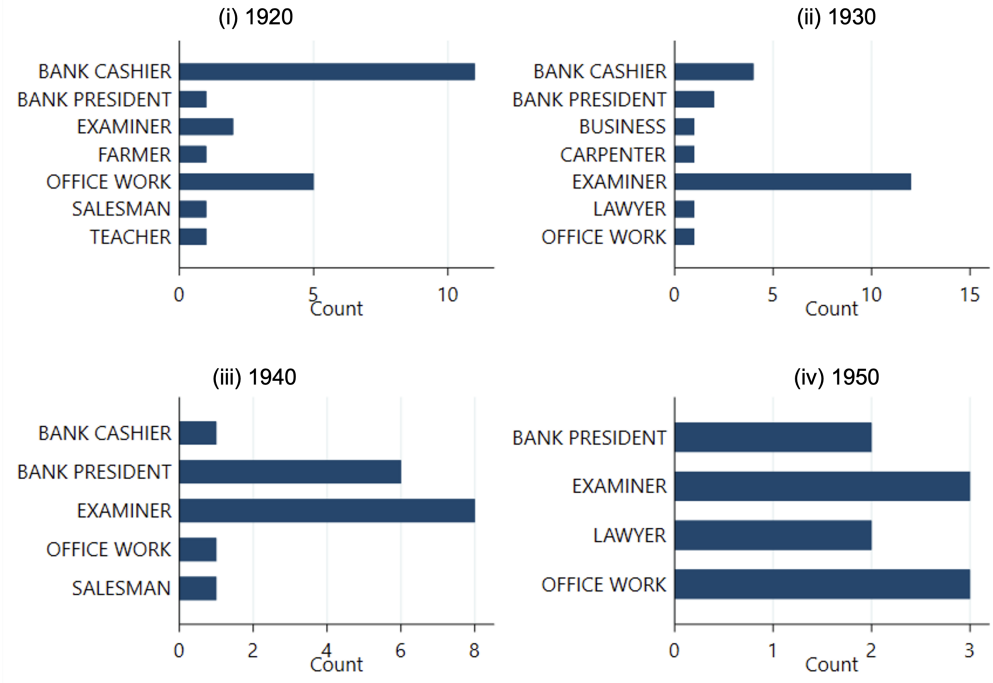

*Notes:* This figure plots the annual number of bank examiners operating in Virginia between 1920 and 1932.
*Source:* Bank examination reports.

**Figure 7:** Demographic Characteristics of Bank Examiners

(a) Average Age of Bank Examiners



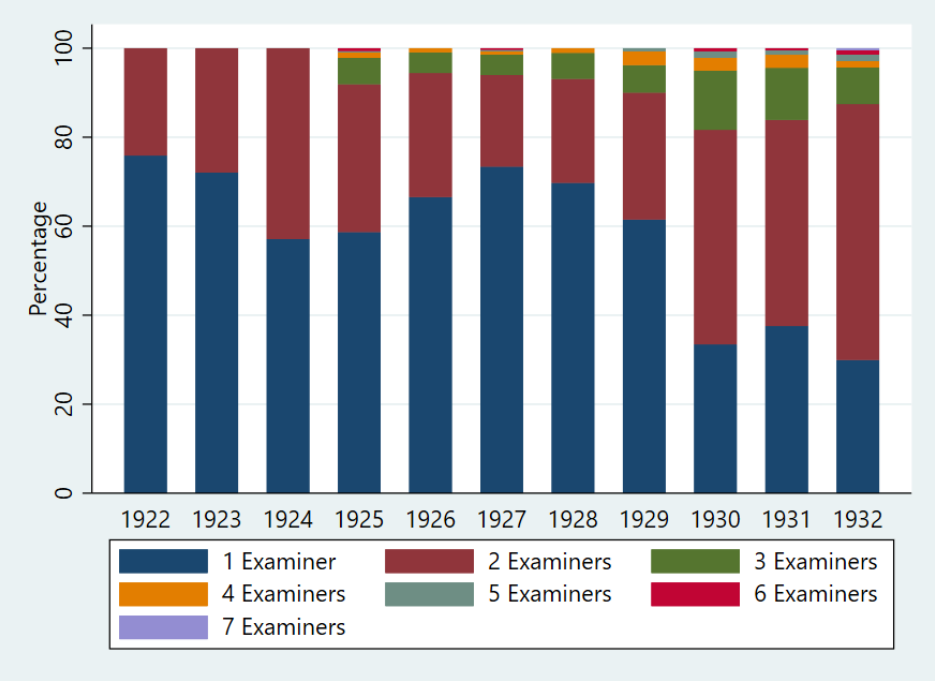

(b) Occupations of Bank Examiners, 1920–1950




*Notes:* Panel A plots the average age of active Virginia bank examiners from 1920 to 1932. Panel B shows their occupational histories based on U.S. Census records from 1920 through 1950.

*Source:* Bank examination reports; U.S. Census.

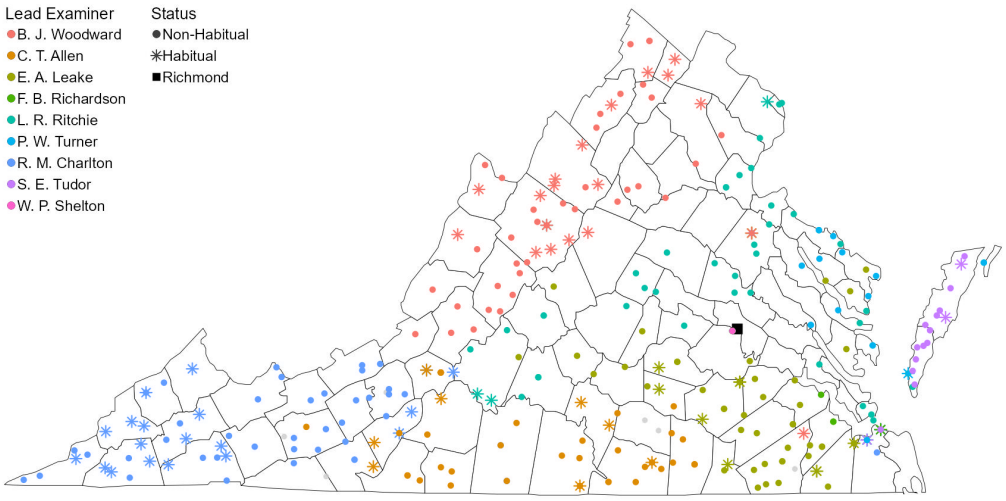
**Figure 8:** Percentage of Banks by Number of Assigned Examiners



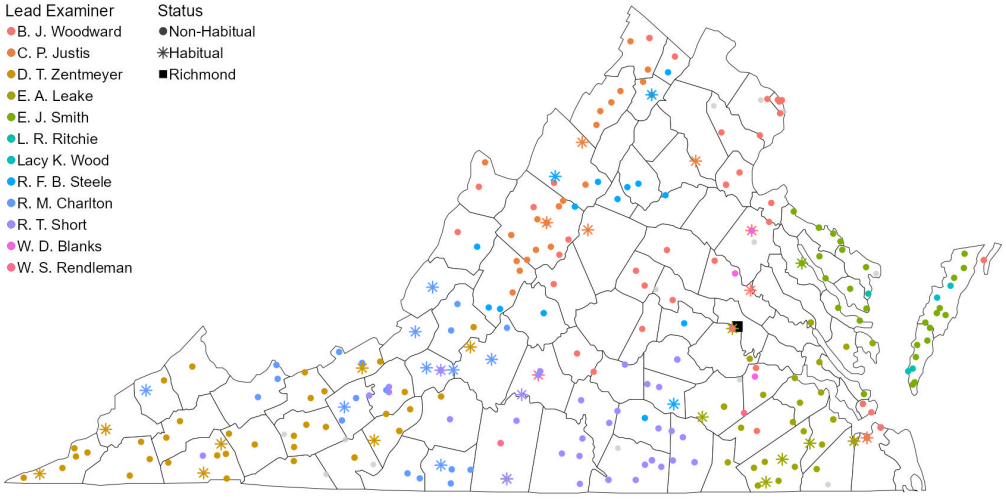

*Notes:* This plot shows the percentage of banks that were reviewed by a given number of examiners during the examinations in Virginia between 1920 and 1932.
*Source:* Bank examination reports.

**Figure 9:** Habitual Borrowers by Examiner

(a) 1922



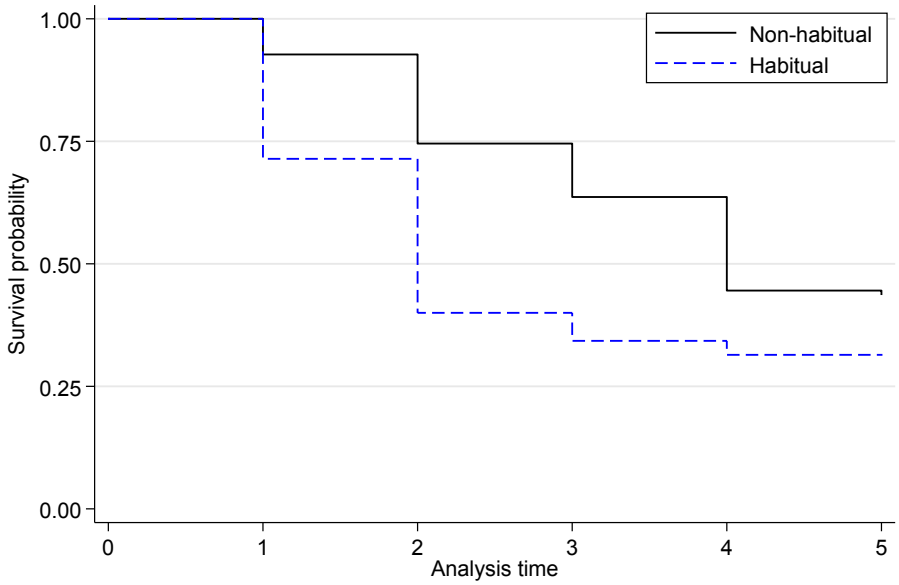

(b) 1929




*Notes:* This figure plots the headquarter location of habitual and non-habitual borrower banks in 1922 and 1929, sorted by examiner.

*Source:* Call Reports, bank examination reports, U.S. Census.

**Figure 10:** Habitual Borrowing and Banking Stability




*Notes:* This figure shows Kaplan–Meier survival estimates comparing the failure probabilities of habitual borrower and non-habitual borrower banks during the Great Depression. "Habitual" denotes banks that were designated as habitual borrowers in either 1928 and 1929, and "non-habitual" denotes banks that were not habitual borrowers in both years. Analysis time covers the period between 1929 and 1934.
*Source:* Bank examination reports, Bankers' Directory.

**Table 1:** Descriptive Statistics

| | **Non-Habitual** | **Habitual** | **Difference** |
|---|---|---|---|
| Liquid assets to total deposits | 17.565 | 18.152 | 0.102 |
| | (15.544) | (29.0996) | (1.035) |
| Investment to total deposits | 131.333 | 262.295 | -107.4*** |
| | (326.547) | (740.850) | (24.59) |
| Equity to total deposits | 46.7556 | 137.2508 | -72.46*** |
| | (253.912) | (562.675) | (19.23) |
| $\mathbb{1}_{Brw>0}$ | 0.3407 | 0.8176 | -0.467*** |
| | (0.4740) | (0.3866) | (0.0235) |
| Borrowings to total deposits | 5.7993 | 33.5199 | -24.02*** |
| | (32.7345) | (126.3754) | (3.784) |
| Borrowings to total capital | 25.8849 | 71.4838 | -45.38*** |
| | (53.8847) | (68.9898) | (2.866) |
| Log(assets) | 12.6949 | 12.7323 | -0.00886 |
| | (1.0319) | (1.0909) | (0.0557) |
| Return on assets | 1.4981 | 1.0444 | 0.00454*** |
| | (1.9203) | (1.2747) | (0.000936) |
| Number of examiners | 1.4474 | 1.4923 | -0.130*** |
| | (0.7347) | (0.6633) | (0.0393) |
| N | 2,483 | 455 | |

*Notes:* This table presents summary statistics for key balance sheet ratios and size for banks classified as habitual or non-habitual borrowers. Means are reported with standard deviations in parentheses for each group. The third column reports the difference in means between the two groups, along with heteroskedasticity-robust t-statistics in parentheses. The sample period is from 1922 to 1931. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports

**Table 2:** Introduction of Enhanced Supervision and Bank Behavior

| | (1) $\Delta Borrowing$ | (2) $\Delta Deposits$ | (3) $\Delta Invest$ | (4) $\Delta Liquid$ | (5) $ROA$ |
|---|---|---|---|---|---|
| Habitual | -2.613** | -0.083*** | -0.085*** | -0.081 | -0.1711 |
| | (1.003) | (0.031) | (0.023) | (0.087) | (0.1760) |
| [1em] Constant | 1.462 | 0.119 | 0.295** | -0.335 | -0.7056 |
| | (6.771) | (0.181) | (0.142) | (0.418) | (1.2722) |
| Controls | Y | Y | Y | Y | Y |
| Observations | 130 | 130 | 130 | 130 | 127 |
| R-squared | 0.458 | 0.414 | 0.386 | 0.264 | 0.160 |

*Notes:* This table presents the relation between habitual borrower status in 1922 and the growth of various balance sheet characteristics. The dependent variables are the percent change in interbank borrowing, deposits, investment, and liquid assets, as well as the return on assets between 1922 and 1923. All columns include controls for bank-level characteristics, including 1922 levels of the borrowing to capital ratio, investment to deposits ratio, liquid assets to deposits ratio, log total assets, and bank age. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports.
*Source:* Call Reports, bank examination reports.

**Table 3:** Enhanced Supervision and Bank Behavior in the 1920s

| | (1) $\Delta Borrowing$ | (2) $\Delta Deposits$ | (3) $\Delta Invest$ | (4) $\Delta Liquid$ | (5) $ROA$ |
|---|---|---|---|---|---|
| Habitual$_{it}$ | -2.579*** | 0.046* | -0.001 | -0.048 | -0.081 |
| | (0.576) | (0.025) | (0.011) | (0.043) | (-0.123) |
| Constant | -2.327 | 4.466*** | 2.310*** | 6.902*** | 1.127 |
| | (15.782) | (0.791) | (0.648) | (1.989) | (5.373) |
| Controls | Y | Y | Y | Y | Y |
| Bank FE | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y |
| Observations | 1116 | 1116 | 1116 | 1116 | 1029 |
| R-Squared | 0.370 | 0.545 | 0.538 | 0.443 | 0.518 |

*Notes:* This table presents the relation between habitual borrower status and the growth of various balance sheet characteristics. The dependent variables are the yearly percent change in interbank borrowing, deposits, investment, and liquid assets, as well as the return on assets. All columns include controls for bank-level characteristics, including lagged levels of the borrowing to capital ratio, investment to deposits ratio, liquid assets to deposits ratio, and log total assets. The sample period is from 1922 to 1931. All columns include bank and year fixed effects. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports.

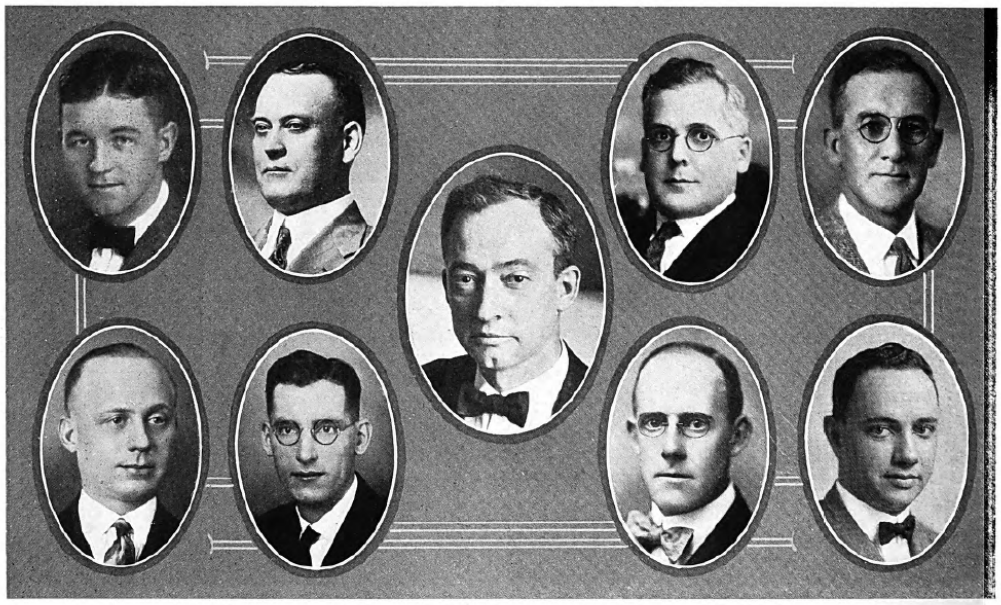
**Table 4:** Survival Models: Habitual Borrowing and Bank Failure

| | **Cox Proportional Hazard Model** | | **Log-Logistic Accelerated Failure Time** | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Habitual | 0.528** | 1.079** | -0.535*** | -0.594* |
| | (0.231) | (0.550) | (0.180) | (0.327) |
| Log(Assets) | -0.298** | -0.049 | 0.169* | -0.013 |
| | (0.128) | (0.278) | (0.089) | (0.167) |
| Liquid/Deposits | -0.014 | -0.061* | 0.004 | 0.037** |
| | (0.025) | (0.032) | (0.016) | (0.018) |
| Equity/Deposits | 0.000 | 0.004* | -0.000 | -0.002* |
| | (0.001) | (0.002) | (0.000) | (0.001) |
| Borrowings/Capital | 0.003*** | 0.003 | -0.002** | -0.001 |
| | (0.001) | (0.002) | (0.001) | (0.001) |
| $ln(\gamma)$ | | | -0.801*** | -1.203*** |
| | | | (0.087) | (0.117) |
| Constant | | | -0.507 | 1.430 |
| | | | (1.066) | (1.998) |
| County FE | | Y | | Y |
| Observations | 141 | 141 | 141 | 141 |

*Notes:* This table presents the survival models of Virginia state banks not incorporated in Richmond during the Great Depression. "Habitual" denotes banks that were classified as habitual borrowers in either 1928 or 1929. Hazard and failure time outcomes are measured from 1930 to 1934. Columns (1) and (2) report hazard ratios from the Cox proportional hazards model, and Columns (3) and (4) report coefficients from the log-logistic accelerated failure time (AFT) model. $ln(\gamma)$ is the natural log of the log-logistic shape parameter. Columns (2) and (4) include county fixed effects. Robust standard errors are clustered at the bank level. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

# Appendix A Figures and Tables

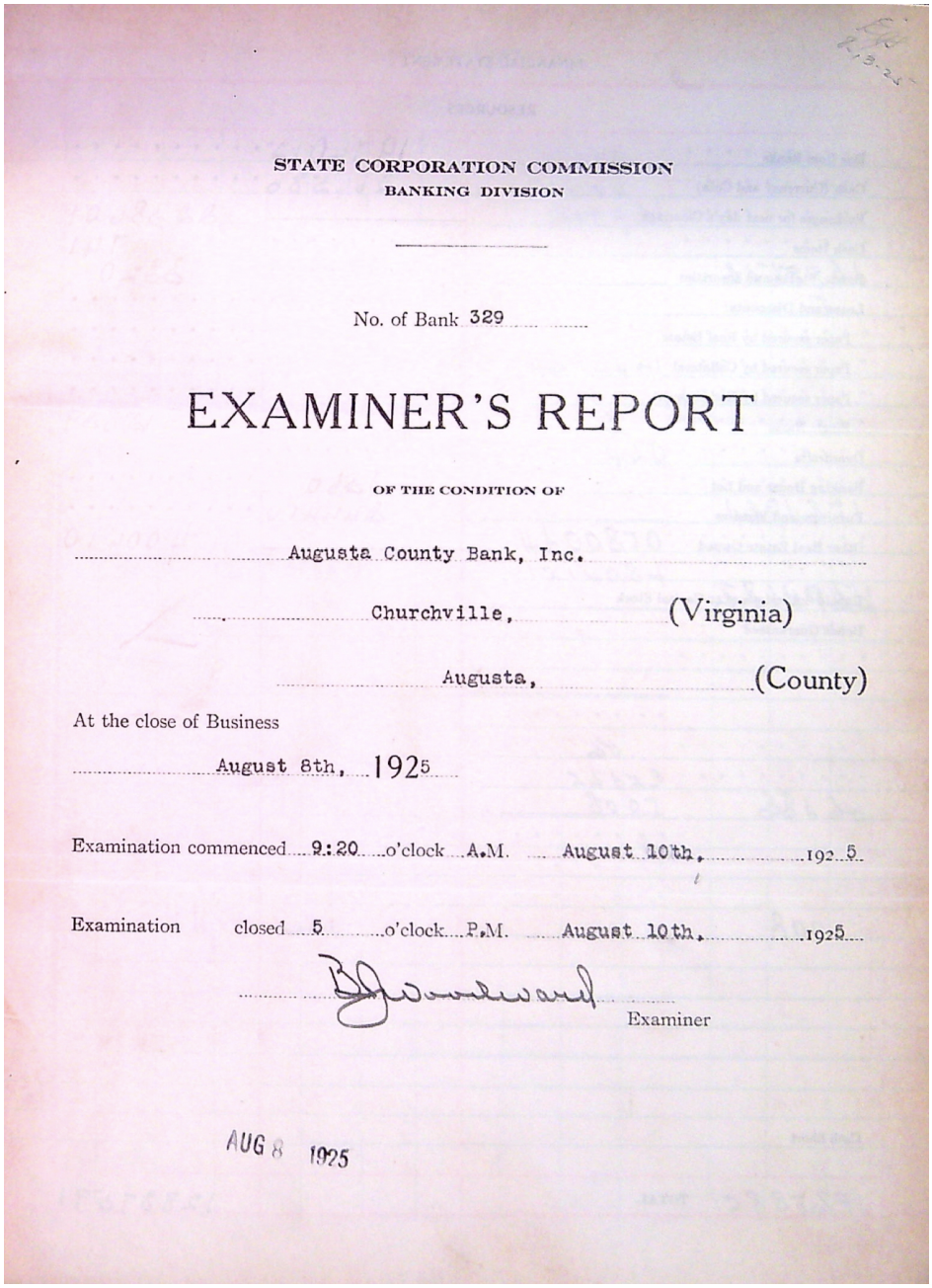
**Figure A.1**



In the center of group is Myon E. Bristow, Chief Bank Examiner. In the top row, from left to right, are: C. T. Allen, R. M. Charlton, E. J. Smith and P. W. Turner. Lower row, from left to right: E. A. Leake, L. R. Ritchie, B. J. Woodward and D. T. Zentmeyer.

*Notes:* This images displays a photo directory of examiners for Virginia's state banking department. *Source: Southern Banker* magazine.

**Figure A.2**



STATE CORPORATION COMMISSION
BANKING DIVISION

No. of Bank 329

# EXAMINER'S REPORT

OF THE CONDITION OF

Augusta County Bank, Inc.

Churchville, (Virginia)

Augusta, (County)

At the close of Business

August 8th, 1925

Examination commenced 9:20 o'clock A.M. August 10th, 1925

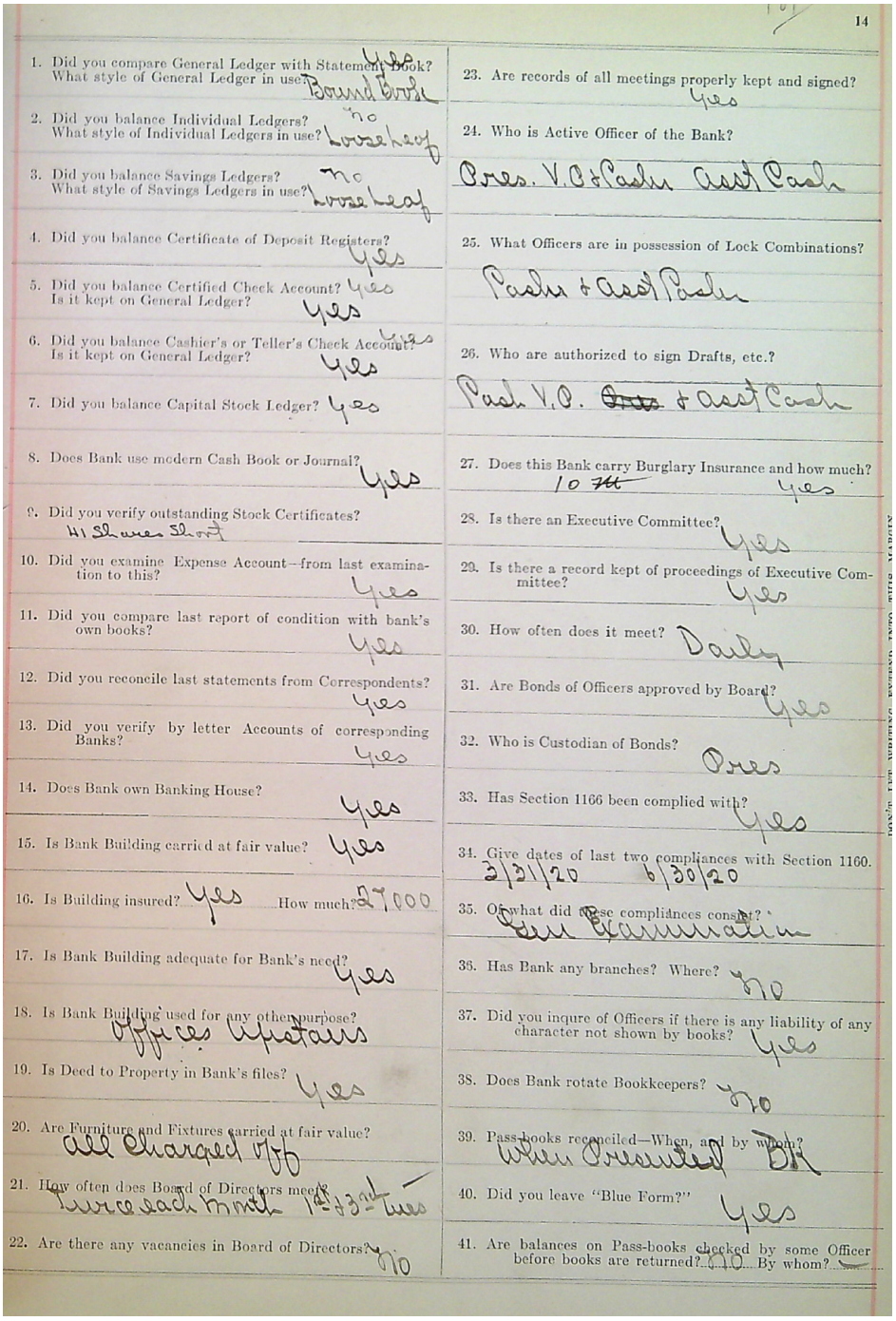
Examination closed 5 o'clock P.M. August 10th, 1925

B J Woodward
Examiner

AUG 8 1925

*Notes:* This images displays the cover page of a Virginia state bank examination report from 1925.

## Figure A.3



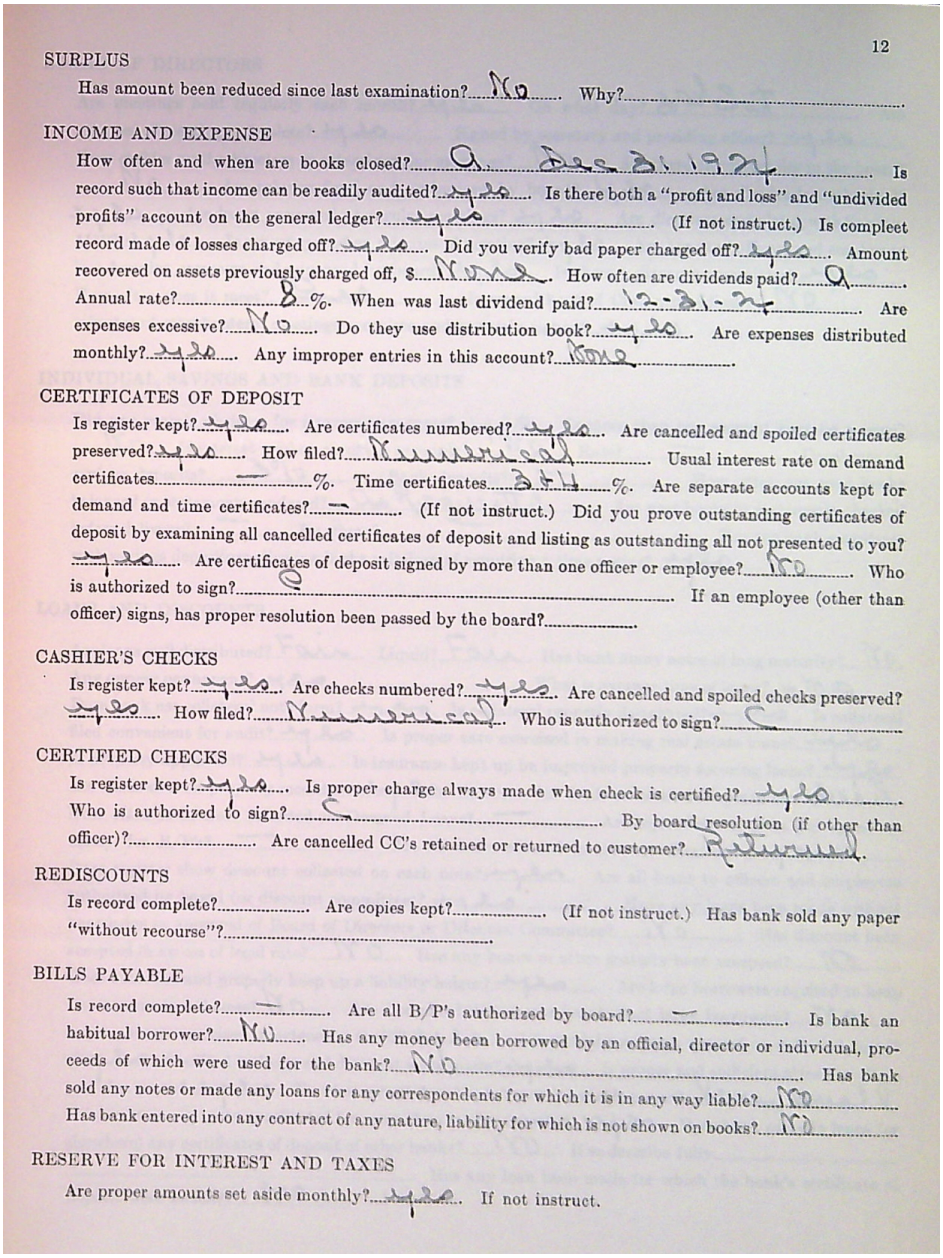
14

1. Did you compare General Ledger with Statement Book? Yes
   What style of General Ledger in use? Bound Book
2. Did you balance Individual Ledgers? no
   What style of Individual Ledgers in use? Loose Leaf
3. Did you balance Savings Ledgers? no
   What style of Savings Ledgers in use? Loose Leaf
4. Did you balance Certificate of Deposit Registers? Yes
5. Did you balance Certified Check Account? Yes
   Is it kept on General Ledger? Yes
6. Did you balance Cashier's or Teller's Check Account? Yes
   Is it kept on General Ledger? Yes
7. Did you balance Capital Stock Ledger? Yes
8. Does Bank use modern Cash Book or Journal? Yes
9. Did you verify outstanding Stock Certificates? 41 Shares Short
10. Did you examine Expense Account—from last examination to this? Yes
11. Did you compare last report of condition with bank's own books? Yes
12. Did you reconcile last statements from Correspondents? Yes
13. Did you verify by letter Accounts of corresponding Banks? Yes
14. Does Bank own Banking House? Yes
15. Is Bank Building carried at fair value? Yes
16. Is Building insured? Yes How much? 27,000
17. Is Bank Building adequate for Bank's need? Yes
18. Is Bank Building used for any other purpose? Offices upstairs
19. Is Deed to Property in Bank's files? Yes
20. Are Furniture and Fixtures carried at fair value? all Charged off
21. How often does Board of Directors meet? Once each month 1st Tues
22. Are there any vacancies in Board of Directors? No

23. Are records of all meetings properly kept and signed? Yes
24. Who is Active Officer of the Bank? Pres. V.P. Cash Asst Cash
25. What Officers are in possession of Lock Combinations? Cash & Asst Cash
26. Who are authorized to sign Drafts, etc.? Cash V.P. ~~Asst~~ & Asst Cash
27. Does this Bank carry Burglary Insurance and how much? 10 M Yes
28. Is there an Executive Committee? Yes
29. Is there a record kept of proceedings of Executive Committee? Yes
30. How often does it meet? Daily
31. Are Bonds of Officers approved by Board? Yes
32. Who is Custodian of Bonds? Pres
33. Has Section 1166 been complied with? Yes
34. Give dates of last two compliances with Section 1160. 3/31/20 6/30/20
35. Of what did these compliances consist? Full Examination
36. Has Bank any branches? Where? No
37. Did you inqure of Officers if there is any liability of any character not shown by books? Yes
38. Does Bank rotate Bookkeepers? No
39. Pass-books reconciled—When, and by whom? When Presented By
40. Did you leave "Blue Form?" Yes
41. Are balances on Pass-books checked by some Officer before books are returned? No By whom?

*Notes:* This images displays an excerpt from the examination report of a Virginia state bank prior to 1922.

## Figure A.4



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SURPLUS

Has amount been reduced since last examination? No Why?

INCOME AND EXPENSE

How often and when are books closed? Q. Dec. 31, 1924 Is record such that income can be readily audited? Yes Is there both a "profit and loss" and "undivided profits" account on the general ledger? Yes (If not instruct.) Is compleet record made of losses charged off? Yes Did you verify bad paper charged off? Yes Amount recovered on assets previously charged off, $ None How often are dividends paid? Q Annual rate? 8 %. When was last dividend paid? 12-31-24 Are expenses excessive? No Do they use distribution book? Yes Are expenses distributed monthly? Yes Any improper entries in this account? None

CERTIFICATES OF DEPOSIT

Is register kept? Yes Are certificates numbered? Yes Are cancelled and spoiled certificates preserved? Yes How filed? Numerical Usual interest rate on demand certificates — %. Time certificates 3 & 4 %. Are separate accounts kept for demand and time certificates? — (If not instruct.) Did you prove outstanding certificates of deposit by examining all cancelled certificates of deposit and listing as outstanding all not presented to you? Yes Are certificates of deposit signed by more than one officer or employee? No Who is authorized to sign? C If an employee (other than officer) signs, has proper resolution been passed by the board?

CASHIER'S CHECKS

Is register kept? Yes Are checks numbered? Yes Are cancelled and spoiled checks preserved? Yes How filed? Numerical Who is authorized to sign? C

CERTIFIED CHECKS

Is register kept? Yes Is proper charge always made when check is certified? Yes Who is authorized to sign? C By board resolution (if other than officer)? Are cancelled CC's retained or returned to customer? Returned

REDISCOUNTS

Is record complete? Are copies kept? (If not instruct.) Has bank sold any paper "without recourse"?

BILLS PAYABLE

Is record complete? — Are all B/P's authorized by board? — Is bank an habitual borrower? No Has any money been borrowed by an official, director or individual, proceeds of which were used for the bank? No Has bank sold any notes or made any loans for any correspondents for which it is in any way liable? No Has bank entered into any contract of any nature, liability for which is not shown on books? No

RESERVE FOR INTEREST AND TAXES

Are proper amounts set aside monthly? Yes If not instruct.

*Notes:* This images displays an excerpt from the examination report of a Virginia state bank in 1922 and later.

**Table A.1:** Descriptive Statistics, 1922

| | (1) **Non-Habitual** | (2) **Habitual** | (3) **Difference** |
|---|---|---|---|
| Liquid assets to total deposits | 20.79 | 14.41 | 6.38*** |
| | (11.20) | (6.389) | (1.39) |
| Investment to total deposits | 106.7 | 128.9 | -22.14*** |
| | (34.33) | (40.40) | (4.80) |
| Equity to total deposits | 29.85 | 36.29 | -6.45* |
| | (26.60) | (33.24) | (3.78) |
| Borrowings to total deposits | 3.07 | 17.69 | -14.62*** |
| | (7.79) | (17.81) | (1.45) |
| Borrowings to total capital | 19.22 | 85.77 | -66.55*** |
| | (48.40) | (90.43) | (8.06) |
| Log (Assets) | 12.56 | 12.55 | 0.01 |
| | (1.11) | (1.06) | (0.15) |
| Observations | 254 | 71 | |

*Notes:* This table presents summary statistics for key balance sheet ratios and size for banks classified as habitual or non-habitual borrowers in 1922. Means are reported with standard deviations in parentheses for each group. The third column reports the difference in means between the two groups, along with heteroskedasticity-robust standard errors in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports.

**Table A.2:** Introduction of Enhanced Supervision at Non-Richmond Banks

| | (1) $\Delta Borrowing$ | (2) $\Delta Deposits$ | (3) $\Delta Invest$ | (4) $\Delta Liquid$ |
|---|---|---|---|---|
| Habitual | -2.462** | -0.080** | -0.081*** | -0.060 |
| | (1.014) | (0.031) | (0.024) | (0.086) |
| Constant | -1.261 | 0.170 | 0.240 | 0.112 |
| | (7.050) | (0.216) | (0.157) | (0.463) |
| Controls | Y | Y | Y | Y |
| Observations | 123 | 123 | 123 | 123 |
| R-Squared | 0.455 | 0.326 | 0.331 | 0.283 |

*Notes:* This table presents the relation between habitual borrower status in 1922 and the growth of various balance sheet characteristics among banks that are not headquartered in Richmond. The dependent variables are the percent change in interbank borrowing, deposits, investment, and liquid assets between 1922 and 1923. All columns include controls for bank-level characteristics, including 1922 levels of the borrowing to capital ratio, investment to deposits ratio, liquid assets to deposits ratio, log total assets, and bank age. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports.

**Table A.3:** Introduction of Enhanced Supervision at Non-Federal Reserve Member Banks

| | (1) $\Delta Borrowing$ | (2) $\Delta Deposits$ | (3) $\Delta Invest$ | (4) $\Delta Liquid$ |
|---|---|---|---|---|
| Habitual | -2.806*** | -0.096*** | -0.085*** | -0.091 |
| | (0.972) | (0.031) | (0.024) | (0.089) |
| Constant | -3.244 | 0.099 | 0.157 | -0.017 |
| | (6.638) | (0.222) | (0.156) | (0.500) |
| Controls | Y | Y | Y | Y |
| Observations | 119 | 119 | 119 | 119 |
| R-Squared | 0.473 | 0.419 | 0.405 | 0.271 |

*Notes:* This table presents the relation between habitual borrower status in 1922 and the growth of various balance sheet characteristics among non-Federal Reserve member banks. The dependent variables are the percent change in interbank borrowing, deposits, investment, and liquid assets between 1922 and 1923. All columns include controls for bank-level characteristics, including 1922 levels of the borrowing to capital ratio, investment to deposits ratio, liquid assets to deposits ratio, log total assets, and bank age. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports.

**Table A.4:** Enhanced Supervision at Non-Richmond Banks in the 1920s

| | (1) $\Delta Borrowing$ | (2) $\Delta Deposits$ | (3) $\Delta Invest$ | (4) $\Delta Liquid$ |
|---|---|---|---|---|
| Habitual$_{it}$ | -2.623*** | 0.042 | -0.002 | -0.033 |
| | (0.577) | (0.027) | (0.012) | (0.042) |
| Constant | -3.863 | 5.110*** | 2.590*** | 7.845*** |
| | (19.120) | (1.084) | (0.536) | (1.469) |
| Controls | Y | Y | Y | Y |
| Bank FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |
| Observations | 1047 | 1047 | 1047 | 1047 |
| R-Squared | 0.380 | 0.418 | 0.559 | 0.328 |

*Notes:* This table presents the relation between habitual borrower status and the growth of various balance sheet characteristics at banks not headquartered in Richmond. The dependent variables are the yearly percent change in interbank borrowing, deposits, investment, and liquid assets. All columns include controls for bank-level characteristics, including lagged levels of the borrowing to capital ratio, investment to deposits ratio, liquid assets to deposits ratio, and log total assets. The sample period is from 1922 to 1931. All columns include bank and year fixed effects. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports.

**Table A.5:** Enhanced Supervision at Non-Federal Reserve Member Banks in the 1920s

| | (1) $\Delta Borrowing$ | (2) $\Delta Deposits$ | (3) $\Delta Invest$ | (4) $\Delta Liquid$ |
|---|---|---|---|---|
| Habitual$_{it}$ | -2.551*** | 0.046* | -0.002 | -0.049 |
| | (0.578) | (0.027) | (0.012) | (0.045) |
| Constant | 0.132 | 4.432*** | 2.266*** | 6.817*** |
| | (15.746) | (0.811) | (0.664) | (2.031) |
| Controls | Y | Y | Y | Y |
| Bank FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |
| Observations | 1049 | 1049 | 1049 | 1049 |
| R-Squared | 0.388 | 0.546 | 0.540 | 0.444 |

*Notes:* This table presents the relation between habitual borrower status and the growth of various balance sheet characteristics at non-Federal Reserve member banks. The dependent variables are the yearly percent change in interbank borrowing, deposits, investment, and liquid assets. All columns include controls for bank-level characteristics, including lagged levels of the borrowing to capital ratio, investment to deposits ratio, liquid assets to deposits ratio, and log total assets. The sample period is from 1922 to 1931. All columns include bank and year fixed effects. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.
*Source:* Call Reports, bank examination reports.