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Abstract

Minority-owned banks have a mission to promote economic well-being in their communities. In particular, specialization in lending based on a central mechanism of shared-minority identity can yield an advantage in serving community needs through times of financial and economic crises. To test this proposition, we analyze individual banks in their local market context from 2006 to 2020. Results suggest minority-owned banks improve economic resilience in their communities during the global financial crisis (GFC) and the COVID-19 crisis through increased small business and household lending, but fewer benefits are found during other phases of the business cycle. Our results are robust and stand up to treatments of identification concerns, including propensity score matching (PSM) and instrumental variables (IV). Our results imply that if all U.S. banks behaved in a manner consistent with minority-owned banks through the GFC, at least 1.9 million more minority jobs would have been maintained and at least $50 billion more in credit would have been available to small businesses on an annual basis. These findings are consistent with predictions of the economic resilience literature but not those of the finance-growth nexus literature.

Keywords: minority-owned banks, minority employment, community banking, crises, economic resilience, small business credit, household credit, shared-minority identity
JEL Codes: G01, G21, O12, J15, J21

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"Let us put our moneys together… …let us put our money out at usury among ourselves and reap the benefit ourselves …"

— *Maggie Lena Walker (1901)*

"A resilient society will enjoy stronger growth over the long run because it will better absorb shocks. For that reason, a resilient society is better equipped to take risks. And risk-taking is an essential driver of growth."

— *Markus Brunnermeier (2021),* The Resilient Society

1. Introduction

Local economies fare differently during times of crisis based on their resiliency. Minority individuals are particularly vulnerable through economic crises — minority employment was more sensitive to economic conditions through both the global financial crisis (GFC) (e.g., Orrenius and Zavodny, 2010; Hoynes, Miller, and Schaller, 2012; Couch, Fairlie, and Xu, 2018) and the COVID-19 crisis (e.g., Brodeur, Gray, Islam, and Bhuiyan, 2021; Montenovo, Jiang, Lozano-Rojas, Schmutte, Simon, Weinberg, and Wing, 2021). To provide opportunities and address resiliency, minority communities founded their own financial institutions. Minority-owned banks — depository institutions with majority stock owned by individuals who identify themselves as minority (Black, Asian, Hispanic, or Native American) — have a long, though fraught history in the U.S. (Ammons, 1996; Baradaran, 2017). The quote by Maggie Lena Walker (1901), the first Black female bank president in the U.S., captures the key motivation of minority-owned banks — to promote wealth, end the cycle of poverty, and strengthen economic resilience in their communities. Markus Brunnermeier's quote highlights that economic resilience is key for absorbing the shocks from economic downturns and other adverse events such as COVID-19. Here, we empirically test the extent to which minority-owned banks strengthen economic resilience within and beyond their own communities.

Within the finance literature, one known mechanism for alleviating economic distress is relationship lending (Kysucky and Norden, 2016; Bolton, Freixas, Gambacorta, and Mistrulli, 2016; Berger, Bouwman, Norden, Roman, Udell, and Wang, 2022a, 2022b). In that context, lenders use private information to assess borrower risk and to make lending decisions. In particular, lenders use soft information, which reflects intangible borrower characteristics (e.g., dependability) collected through long-term relationships.

In this paper, we propose a novel mechanism through which information is transmitted, not yet considered in the literature: shared minority identity. Here, the lender and borrower share an identity via a relevant characteristic (e.g., race, ethnicity), which enables more effective information transmission. Through more effective verbal and nonverbal communications, lenders are able to more efficiently acquire and process soft information from borrowers who share their identity. Distinct from relationship lending, a long-term relationship is not required. These mechanisms are not mutually exclusive; lenders may use both relationship lending and shared minority identity. The shared minority identity may be particularly important for individuals who may not always be best served by the banking industry (e.g., racial and ethnic minorities).

Members of the same ethnic or minority group share a common native language, have shared traditions and culture, and other difficult-to-measure-but-differentiating characteristics. We acknowledge that the concept of shared minority identity is broad and may reflect many characteristics (e.g., race, ethnicity, gender). The shared minority identity may only function within minority groups, or it may function in a more diffused way between groups. We regard being a minority of any race or ethnicity as potentially powerful. There are also few minority-owned banks, raising statistical power problems. Thus, to construct the minority category, we aggregate several racial and ethnic minorities into one classification. Here, we demonstrate how a shared minority identity results in increased local resiliency.

Minority-owned banks, loan officers, and other bank employees can establish higher levels of mutual trust and reduce transaction costs when dealing with borrowers in their own racial or ethnic groups because of more effective communication (e.g., communicate in a borrower's native language or dialect) that would provide more nuanced evaluation of risk and reduce taste-based unfavorable racial discrimination. Minority borrowers might also be less likely to strategically default on loans from minority-owned banks to avoid loss of reputation or community capital (i.e., defaulting on peers in their own community). Here, we consider the extent to which minority-owned banks impact economic growth and resilience in their communities and the mechanisms through which they achieve this. Specifically, we examine this by considering how minority-owned banks impact employment growth across the business cycle, as well as the underlying mechanism, the credit supply.

Our results indicate that the presence of minority-owned banks helps mitigate employment losses for minorities through both the GFC and the COVID-19 crisis. We find evidence consistent with a shared-identity transmission of information, where minority-owned banks maintain small business and residential real estate credit supplies through each crisis. Results stand in contrast to the extant literature. Across a range of outcomes, Berger, Bouwman, Norden, Roman, Udell, and Wang (2022a) find relationship lenders take advantage of firms through the COVID-19 crisis. We also find that during times of crisis, minority-owned banks mitigate employment losses for local nonminority individuals as well. In sum, we find minority-owned banks enhance the economic strength of their communities through economic resilience.

This study builds on a series of literature streams to contribute to our understanding of how bank-ownership characteristics impact local economies, and the role of shared identity in facilitating the transfer of information. The finance-growth nexus literature established that more robust financial systems lead to faster economic growth (King and Levine, 1993; Berger, Hasan, and Klapper, 2004). This stream highlights the potential for minority-owned banks to strengthen economic growth through a range of business cycle conditions. The economic resilience literature focuses on the institutions or policies that mitigate the impact of financial and economic crises (e.g., Martin, 2012), in particular local finance (Petach and Weiler, 2019; Levine, Lin, and Wensi, 2020; Petach, Weiler, and Conroy, 2021; Langford and Feldman, 2021). This stream highlights the potential for minority-owned banks to strengthen economic resilience through economic and financial crises. The role of minority-owned banks in economic development and resilience has not been previously investigated.

In terms of mechanisms, the idea that minority-owned banks better serve their own communities reflects the importance of efficient collection and processing of information (Stein 2002). This improves financing for small businesses and enables greater overall bank credit flows. The final body of literature — small business finance — also speaks to the underlying mechanisms by considering how the various sources of small business finance shift over both the firm and business cycles (e.g., Berger and Udell, 1998, Berger and Roman, 2018). This body of literature considers how types of finance firms' access depends on informational opacity, or the capacity of firms to signal their quality. Here, we expect minority-owned banks, through more effective communication, to have a greater capacity to assess firm quality. In sum, our contribution is to demonstrate that minority-owned banks enhance economic resilience, consistent with a novel lending mechanism, shared minority identity.

We investigate the impact of minority-owned banks through three conditions: regular business cycle times, the GFC, and the COVID-19 crisis. We construct a county-year level panel data set (2006–2020) and regress market outcomes on the presence of minority-owned banks, controlling for other banking, socioeconomic, and demographic factors. We find that as the county-level market share of minority-owned banks increases, overall, minority, and White employment growth reductions are attenuated during the GFC (2007–2009) and in most cases also during the COVID-19 crisis (2020), though fewer positive effects are observed during other portions of the business cycle.

We also construct a series of tests to address identification concerns and enhance our confidence that our results are causal. To mitigate selection bias concerns, we use a propensity score matching (PSM) technique to predict the probability of minority-owned bank presence and limit the samples to those counties with common support. We also limit our samples to counties that either contain or are adjacent to those that contain minority-owned banks. To mitigate reverse-causality concerns, we use an instrumental variable (IV) technique. Here, we use minority ancestry to predict minority-owned bank market share. Finally, to increase confidence in our results, we analyze a series of alternative specifications. Our main results hold, increasing confidence in the robustness of these results. Notably, our results have significant economic impacts. If all banks in the U.S. behaved consistent with minority-owned banks through the GFC, at least 1.9 million minority jobs would have been maintained and $50 billion in credit would have been available on an annual basis to local firms.

In terms of expected mechanisms, broadly, we expect employees of minority-owned banks to have more effective lines of communication with minority-owned firms and households. We examine underlying mechanisms by testing whether minority-owned banks impact the local economy through credit supply to small businesses and households. We estimate the effect of minority-ownership status on small business and residential mortgage lending through each crisis and the remainder of the business cycle. We find minority-owned banks reduce small business and residential mortgage lending less through the GFC, and sometimes also during the COVID-19 crisis. These analyses indicate minority-owned banks mitigated the effects of the GFC through maintaining small business and household lending. These findings are consistent with a shared minority identity enabling minority-owned banks to have superior skills in collecting and processing information, but it is not possible to directly test this with the available data. Through noncrisis times, our findings are nuanced; small business origination growth is lower in minority-owned banks, while residential mortgage lending rates are higher.

The remainder of this paper is organized as follows. Section 2 discusses prior research on relations between local finance and economic resilience, as well as research on the GFC and the COVID-19 crisis and outlines our empirical approach. Section 3 provides our main county-level estimation results for overall, minority, and White employment, while Section 4 provides evidence on bank-level small business lending as a channel for the main effects. Section 5 offers additional small business and household lending results to further interrogate the channels. Section 6 provides conclusions, policy implications, and recommendations for future research.

2. Minority-Owned Banks and Economic Resilience

2.1 – Local Finance and Economic Growth

The finance-growth nexus literature demonstrates that robust financial systems cause faster economic growth across business and economic conditions (e.g., King and Levine, 1993). Consistent with this point, as the market share of community banks increase, GDP growth increases in both developed and developing nations via several mechanisms (e.g., small business lending, overall credit flows), consistent with relationship lending (Berger, Hasan, and Klapper, 2004). To the authors' knowledge, this is the first study to investigate the extent to which minority-owned banks promote local economic growth overall and for minorities in their communities across economic and financial environments.

2.2 – Local Finance and Economic Resilience

Martin and Sunley (2015) define economic resilience as the capacity of a geographic region to withstand and recover from shocks to its growth trajectory. Economic resilience represents the capacity to adapt (e.g., Christopherson, Michie, and Tyler, 2010; Clark, Huang, and Walsh, 2010; Pike, Dawley, and Tomaney, 2010; Simmie and Martin, 2010). Our central argument is that minority-owned banks strengthen the economic resilience of their communities by lessening the impact of financial and economic crisis. Empirical studies demonstrate income inequality (Lewin, Watson, and Brown, 2017; Rahe, Weber, Wu, and Fisher, 2019), state-level fiscal policies (Gjerde, Prescott, and Rice, 2019), and local finance affect economic resilience (Petach and Weiler, 2019; Levine, Lin, and Wensi, 2020; Petach, Weiler, and Conroy, 2021; Langford and Feldman, 2021).

The GFC and the current COVID-19 crisis provide an opportunity to assess the differential effects of minority-owned banks on economic downturns. These downturns are particularly important for minority workers; studies demonstrate minority employment is more sensitive to economic conditions, both through the GFC (e.g., Orrenius and Zavodny, 2010; Hoynes, Miller, and Schaller, 2012; Couch, Fairlie, and Xu, 2018) and the current COVID-19 crisis (e.g., Brodeur, Gray, Islam and Bhuiyan, 2021; Montenovo, Jiang, Lozano-Rojas, Schmutte, Simon, Weinberg, and Wing, 2021). Thus, to the extent that minority-owned banks achieve their mission by promoting economic resilience, greater presence of minority-owned banks would be associated with improved economic outcomes for minorities in their communities during economic and financial crises, when such aid may be most urgently needed.

2.3 – Minority-Owned Banks and Discrimination

Defined as depository institutions with 51 percent or more of the voting stock owned by individuals who identify themselves as minority (e.g., Black, Asian, Hispanic, Native American), minority-owned banks typically serve a specific community. In particular, Black-owned banks have a long history in the U.S.; Black-owned bank openings peaked between Reconstruction and the Great Depression (Gerena, 2007). However, in recent years, non-Black, minority-owned banks have gained prominence. **Figure 1** provides the number of minority-owned banks in the U.S. over the time period of interest (2006–2020). Here, we see the number of minority-owned banks began to increase after 2014, a trend driven by an increase in Asian and Hispanic-owned banks. Notably, the number of Black-owned banks declined from 31 in 2006 to 18 in 2021 with $5.35 billion in total assets (authors' calculations). In contrast, Hispanic and Asian-owned banks increased in number over the same time period (Hispanic, 2006: 19; 2020: 30; Asian, 2006: 39; 2020: 67). This indicates minority-owned banks represent an increasingly strong force within the banking industry, although the composition is changing.[2]

Figure 2 presents the geographic distribution of minority-owned banks across the contiguous U.S. in 2020. We show the distribution using an indicator variable for the presence of a bank branch of a minority-owned bank. **Figure 3** presents the geographic distribution of the minority population across the contiguous U.S. We show the distribution as of 2020, using the proportion of the total population classified as a racial or ethnic minority. These figures indicate minority-owned banks exist across the U.S., with pockets in population centers (e.g., California, New York, Florida) and regions with high-minority populations (e.g., Texas, Oklahoma). The largest concentration of minority-owned bank branches is along the Texas–Mexico border, as well as central and southern Florida. Notably, the Great Plains register no minority-owned banks.

[2] Ideally, we would differentiate among types of minorities. However, because of the small number of minority-owned banks, and the associated statistical analysis issues, our sample includes minority-owned banks as a whole.

Minority-owned banks differ from nonminority-owned banks in terms of behavior (Kwast and Black, 1983), portfolio composition (Bates and Bradford, 1980), performance (Gardner, 1982; Ziorklui, 1994; Lawrence, 1997), efficiency (Elyasiani and Mehdian, 1992; Henderson, 1999; Iqbal, Ramaswamy, and Akhigbe, 1999; Barth and Xu, 2020), reaction to deregulation (Holdren and Heyliger, 1993), lending practices (Black, Collins, and Cyree, 1997; Black, Robinson, and Schweitzer, 2001) and bank failures (Kashian and Drago, 2016. We extend this stream of research by examining the interaction between minority-owned banks and local economies.

We expect minority-owned banks to have a particularly strong impact on the credit supply for minority-owned firms and households, an effect driven by shared minority identity and better in-house information expertise to evaluate the credit quality of such borrowers. Drexler and Schoar (2014) show that as relationship strength between loan officers and borrowers decreases, the credit supply is reduced and default likelihood increases. Fisman, Paravisini, and Vig (2017) show lender and borrower cultural proximity increases credit supply and reduces default using a loan officer rotation policy, which introduces exogenous variation in religion and caste. These studies show soft information is a key factor in credit access; this paper extends consideration to shared-identity information and economic impacts.

Another mechanism is discrimination. Taste-based discrimination is a preference for a specific group, independent of expected profit (Becker, 1957). In contrast, statistical discrimination reflects profit maximization differences in loan outcomes. Although the mechanism differs, the outcomes remain consistent, with minorities often being disadvantaged by majority-owned lenders. There is evidence of discriminatory behavior in consumer credit markets toward minorities (Beck, Behr, and Madestam, 2018; Begley and Purnanandam, 2021; Bhutta, Hizmo, and Ringo, 2021; Giacoletti, Heimer, and Yu, 2021; Ambrose, Conklin, and Lopez, 2021; Bartlett, Morse, Stanton, and Wallace, 2022). In particular, minorities face great difficulty in obtaining credit (Begley and Purnanandam, 2021; Bhutta, Hizmo, and Ringo, 2021; Giacoletti, Heimer, and Yu, 2021; Ambrose, Conklin, and Lopez, 2021). For example, Munnell, Tootell, Browne, and McEneaney(1996) demonstrate that, conditional on personal and property characteristics, White applicants have lower rejection rates than minorities. Similarly, Bartlett, Morse, Stanton, and Wallace (2022) provide evidence that approximately 1 million minority applicants were rejected between 2009 and 2015 due to discrimination. Chu, Ma, and Zhang (2022) demonstrate that when banks transition from private to public ownership, mortgage denial rates for Blacks are reduced. This points to ownership structures impacting taste-based discrimination.

A key mechanism commonly identified in mitigating economic distress is relationship lending. Relationship lending occurs when a bank repeatedly interacts with a borrower, and through this, obtains private information (Boot, 2000; Beck, Degryse, De Haas, and Van Horen, 2018). This soft information can reflect creditworthiness, thus enabling banks to adapt their lending behavior accordingly (Rajan, 1992; von Thadden, 1995; Beck, Degryse, De Haas, and Van Horen, 2018). The paradigm has been that large banks conduct primarily transaction lending, while small banks conduct primarily relationship lending (e.g., Cole, Goldberg, and White, 2004; Berger, Miller, Petersen, Rajan, and Stein, 2005; Berger, Bouwman, and Kim, 2017). Minority-owned banks are smaller relative to other banks, so we expect minority-owned banks to also have a higher proportion of relationship loans. We also expect minority-owned banks to more effectively collect and process both soft and hard information from their borrowers via shared minority identity. Specifically, loan officers and other employees of minority-owned banks may be better able to screen and monitor minority-owned businesses and households because of better comprehension and expression of verbal and nonverbal communication, higher mutual trust, and/or greater taste for loans to minorities. These improve access to additional information that would increase the statistical evaluation of credit access to minority firms and households. Additionally, minority borrowers may also behave more responsibly and default less when borrowing from minority-owned banks to maintain a good reputation in their community and avoid costly social sanctions. Frame, Huang, Mayer, and Sunderam, (2021) show that although minority borrowers have lower mortgage application completion, approval, and take-up rates, these differences decrease when minority borrowers work with minority loan officers. This result is consistent with our expected mechanism, shared minority identity. Here, we consider a specific circumstance, economic distress. Jiang, Lee, and Liu (2022) also provide evidence that minority loan officers are less likely to reject minority mortgage borrowers. Vatsa (2021) demonstrates that the loss of a minority-owned bank decreases the minority credit supply at the census-tract level. In sum, minority-owned banks as an antidiscriminatory force are expected to positively impact economic resilience during times of financial and economic crises.

2.4 – Small Business Finance

The small business finance body of literature characterizes the sources of small business finance and how they shift over both the firm and business cycles (e.g., Berger and Udell, 1998; Berger and Roman, 2018). Firms may access several forms of finance; private debt (e.g., bank loans), public debt (e.g., mortgage-backed securities), private equity (e.g., venture capital), and public equity (e.g., stock markets). The source of finance depends on the capacity of the firm to effectively communicate its quality to potential lenders. At the extremes, public firms have extensive reporting requirements that enable public stock offerings, while small, young firms have few financial records and weak or nonexistent reputations, requiring these firms to obtain financing from individuals and banks. In this study, we focus on bank financing, as it is one of the most important sources of finance for small businesses (e.g., Berger and Udell, 1998; Robb and Robinson, 2014; Berger and Roman, 2018). To the authors' knowledge, this is the first study that considers how bank-ownership characteristics impact small business access to finance across the business cycle.

Here, we consider two components of this. First, how firms access private debt, or finance, from banks through both regular business cycle times and crises. Second, how individuals access public debt in the form of home mortgages, from which these individuals may gain access to equity for their businesses. We expect minority-owned banks to have stronger ties with their borrowers via a shared identity, thus reducing information opacity. Thus, to the extent that minority-owned banks form and strengthen relationships with their borrowers, they would achieve their mission of both increasing economic growth and resilience via more efficiently selecting their borrowers.

2.5 – Global Financial Crisis

The GFC provides an adverse event to observe how minority-owned banks impact economic resilience. During the GFC, the four largest banks (Bank of America, Citigroup, JPMorgan Chase, and Wells Fargo) reduced their small business lending more than other institutions (Chen, Hanson, and Stein, 2017). DeYoung, Gron, Torna, and Winton, (2015) find that banks that rely more heavily on relationships continued lending during the GFC. Cotugnoa, Monferrà, and Sampagnaro (2013) show that credit rationing is reduced through the GFC as relationship strength increases. Bolton, Freixas, Gambacorta, and Mistrulli (2016) find although relational banks charge higher rates during normal times, they offer more favorable terms during crises. Beck, Degryse, De Haas, and Van Horen (2018) provide evidence consistent with relationship-oriented banks, alleviating credit constraints through economic downturns; the observed effect increases for small firms and through worsening economic conditions. The recent literature consistently demonstrates that community banks enhanced economic resilience through the GFC (Petach and Weiler, 2019; Petach, Weiler, and Conroy, 2021; Langford and Feldman, 2021). In sum, this research stream indicates relationship strength, and community banks strengthened economic resilience through the GFC. We extend this stream by considering how shared minority identity and minority-owned banks enhanced economic resilience through the GFC.

2.6 – COVID-19 Crisis

The COVID-19 crisis is unique across several characteristics. It is a public health crisis, with implications for the broader economy. It represents the largest economic shock in modern U.S. history, as well as the shortest recession. Although this crisis caused a severe economic downturn, no banking crisis was observed in 2020 (Berger and Demirgüç-Kunt, 2021). This has sparked a rapidly expanding literature.

Considering bank size, Levine, Lin, and Wensi (2020) find counties with a higher proportion of small banks experience less employment declines through the COVID-19 crisis. A series of studies also considered how relationship lending has fared thus far through the COVID-19 crisis. Across a range of outcomes, Berger, Bouwman, Norden, Roman, Udell, and Wang (2022a) find relationship lenders take advantage of firms through the COVID-19 crisis. This finding is in contrast with normal times (e.g., Kysucky and Norden, 2016) and previous crises (e.g., Bolton, Freixas, Gambacorta, and Mistrulli 2016). Using consumer and small business credit card data, Berger, Bouwman, Norden, Roman, Udell, and Wang (2022b) find relationships benefit both groups through the COVID-19 crisis. A series of studies also examine the Paycheck Protection Program (PPP), which was a key policy tool response (see Berger and Demirgüç-Kunt, 2021). Initial evidence indicates this program had a positive impact on employment (Barrazza, Rossi, and Yeager, 2020; Li and Strahan, 2021) and increased conventional small business lending (Karakaplan, 2021; Lopez and Spiegel, 2021; Marsh and Sharma, 2021). Relevant here, Atkins, Cook, and Seamans (2021) find Black-owned firms received loans that were approximately half the size of observationally similar White-owned firm in the early stages of the program. As nontraditional lenders entered the program, this effect disappeared. Berger, Epouhe, and Roman (2022) find subprime consumers with increased access to Troubled Asset Relief Program (TARP) recipient banks increased their debt burden, while the opposite trend was observed for consumers with higher access to PPP banks, demonstrating how the PPP was unique relative to TARP. These results guide our study design; we condition our results on both per capita PPP and TARP values.

2.7 – Hypotheses and Empirical Approach

Based on the arguments discussed previously, in this study, we test three hypotheses: (1) minority-owned banks positively impact employment growth through regular business cycle times; (2) minority-owned banks mitigate employment losses through the GFC; and (3) minority-owned banks mitigate employment losses through the COVID-19 crisis. We test these hypotheses using data sets constructed at the county-year, bank-year, bank-county-year, and loan-bank-county-year levels. At the county-year level, we test the effect of the minority-owned bank market share on employment growth. At the bank-year, bank-county-year, and loan-bank-county-year levels, we test the effect of bank minority-ownership status on small business and residential mortgage lending activity. At each level, we compare regular business cycle times to each of the recent crises. We also condition on a consistent set of socioeconomic, demographic, and bank-health variables across data sets. Together, the analyses estimate the impact of minority-owned banks on economic resilience and point to an underlying mechanism: the credit supply.

3. County-Level Economic Growth and Resilience Analysis

3.1 – Econometric Model

Our central argument is that minority-owned banks strengthen economic growth and resilience in their communities, and this is achieved through more effective communication with borrowers via a shared-minority-identity. Thus, our first objective is to estimate the effect of the minority-owned bank market share on county-level economic growth and resilience, as captured by employment growth. This model estimates the effect of minority-owned bank market share on overall, minority, and White employment growth through regular business cycle times, the GFC, and the COVID-19 crisis, and takes the following form:

$$(1)\ \Delta\ Employment_{it} = \beta_1 \times Minority\ Bank\ Market\ Share_{it} + \\ \beta_2 \times Minority\ Bank\ Market\ Share_{it} \times GFC_t + \\ \beta_3 \times Minority\ Bank\ Market\ Share_{it} \times COVID-19\ Crisis_t + \\ \zeta \times U_{it-1} + State_i + Year_t + \varepsilon_{it}.$$

We observe economic growth and resilience with $\Delta\ Employment_{it}$, the year-over-year percent change in the total number of employed individuals in county *i* and year *t*. We calculate this value for all individuals, minority individuals, and White individuals. We observe the market share of minority-owned banks with $Minority\ Bank\ Market\ Share_{it}$, the proportion of deposits held by minority-owned banks. GFC_t is a GFC indicator variable (equal to one in 2007–2009 and zero otherwise). $COVID-19_t$ is a COVID-19 crisis indicator variable (equal to one in 2020 and zero otherwise).

The effects of interest here are the minority-owned bank market share ($\beta_1 \times Minority\ Bank\ Market\ Share_{it}$), as well as two interaction terms: between the minority-owned bank market share and the GFC ($\beta_2 \times Minority\ Bank\ Market\ Share_{it} \times GFC_t$), and the minority-owned bank share and the COVID-19 crisis ($\beta_3 \times Minority\ Bank\ Market\ Share_{it} \times COVID-19\ Crisis_t$), respectively. The minority-owned bank market share coefficient (β_1) represents the impact of the minority-owned bank market share on employment growth in regular business cycle times, or economic growth. The coefficients of the interaction terms (GFC: β_2; $COVID-19\ Crisis$: β_3) represent the effect of minority-owned bank market share on employment growth in each crisis relative to regular business cycle times, or economic resilience. In each case, positive coefficient estimates indicate minority-owned banks have positive impacts on employment growth or resilience. Given that the model includes year fixed effects, *GFC* and *COVID-19 Crisis* indicators do not appear in non-interacted form.

U_{it-1} represents a vector of county-level time-variant socio-economic, demographic, and bank health control variables (see **Table 1B** for a list and definitions). $State_i$ represents state-level fixed effects, thus conditioning our results on time-invariant state-level differences. $Year_i$ represents year-level fixed effects, thus conditioning our results on national trends. So, we condition on time-invariant state-level characteristics, time-variant national trends, as well as county-level time-variant trends in socioeconomic, demographic, and bank health characteristics.[3]

3.2 – Data Set Construction

One of our chief identification concerns is omitted variable bias. In particular, bank health may be an intervening influence. Chodorow-Reich (2014), using exposure to Lehman Brothers as an instrument for bank health, find that firms with lending relationships to less healthy banks were

[3] In unreported results, we also use the labor market as unit of analysis instead of county, and our main results hold.

less likely to obtain credit, paid higher interest rates, and experienced reduced employment. Kiser, Prager, and Scott (2015) provide evidence indicating that as bank health increases, small business loan volume is maintained. If we fail to account for bank health, and minority-owned banks are healthier than nonminority-owned banks, then we may overestimate the effect of interest. Conversely, if nonminority-owned banks are healthier than minority-owned banks, then we may underestimate the effect of interest. To mitigate these concerns, we condition our analyses on bank health by including a vector of time-variant bank health control variables.

We obtain bank data, including the minority-bank ownership status (RSSD9320), as well as bank health variables from the FFIEC Regulatory Call Reports for the period 2006–2020. For all banks in our sample, we obtain Call Report data for each quarter and construct the annual value for each variable as the mean value of all quarters in that year.[4] The bank-level data set is at the commercial bank level. We obtain TARP data (2008–2010) from the U.S. Department of the Treasury's website (U.S. Treasury). We use the corresponding RSSD9001 (Call Reports ID) to match each data set. We exclude observations that have missing data for total assets or common equity. All financial variables have been adjusted using the GDP deflator to be in real 2021 dollars. In the county-level data set, we convert these bank data to the county-level based on the proportion of their deposits across counties in which they have operations using the FDIC Summary of Deposits database for the given year.

Local characteristics could also be a source of omitted variable bias. We use this concern to guide our selection of additional control variables. We obtain county-level socioeconomic and demographic control variables from the U.S. Census American Community Surveys (ACS) 5-Year Estimates. These are available between 2009 and 2019, and thus we hold them constant to their 2009 values for 2006–2008 and their 2019 values for 2020. We collect industrial composition data for the 2006–2020 time period from the Quarterly Census of Employment and Wages (QCEW). We collect the Housing Price Index (HPI) from the Federal Housing Finance Agency (FHFA). The final data set is constructed between 2006 and 2020. The control variables use a one-year lag, so these variables were also collected for 2005. To construct our dependent variables, we collect county-level employment growth data for the period 2006–2020 from the Quarterly Workforce Indicators (QWI). Similar to the bank-level variables, we obtain QWI data for each quarter and construct the annual value for each variable using the mean value of all quarters in that year.

[4] In unreported results, we also use variables as of the fourth quarter in each year instead, and our main results hold.

We collect data for each county in the contiguous U.S. We exclude counties with missing data for the control variables in our analysis. Our final data set contains 2,552 counties (82.1% of all counties; 91.8% of the population).

3.3 – Summary Statistics

Table 1 provides variable definitions, while Table 2 provides summary statistics for each variable. In terms of employment growth, the overall mean value is 0.02%, while the minority mean value is 2.41%. The *Minority Bank Market Share* mean value, approximately 0.0043%, indicates that most counties have low minority bank market shares.

In terms of socio-economic and demographic measures, the average proportion of minority individuals is 22.33%, *Working Age* is 51.38%, *Bachelor's Degree* is 14.50%, *Population Density* is 0.13, and *HPI* is 293.49. In terms of industrial composition, the mean proportion of workers in *Manufacturing* is 16.12%, *Arts, Entertainment, and Recreation* is 1.53%, *Accommodation and Food Services* is 9.97%, and *Public Administration* is 7.44%. Considering bank CAMELS proxies, the declared set of financial criteria used by regulators to assess the health of banking organizations, we find the average county over our time period has aggregated bank *Capital Adequacy* of 10.91%, *Asset Quality* of 1.50%, *Management Quality* of 0.96%, *Earnings* of 0.85%, *Liquidity* of 26.08%, and *Sensitivity to Market Risk* of 15.02%. Considering other bank characteristics, we find the average county over our time period has *Bank Deposits ($100s per capita)* of $1,029.35, *Bank Assets (Log)* of 27.56 and *Bank Age* of 97.57. In terms of bank ownership, 75.29% are *Bank Holding Company Owned*. In terms of regulation, 39.35% are regulated by the OCC, 42.93% are regulated by the FDIC and 17.71 % are regulated by the Federal Reserve System. Considering market characteristics, we find the average county over our time period has aggregated *Herfindahl-Hirschman Index (HHI)* of 0.16, and proportion of banks with the majority of deposits in metropolitan areas of 69.01%. Considering the magnitude of each policy level, the *TARP Amount (per capita)* is $2.25, while the *PPP Amount ($1,000s per capita)* is $65.50.

3.4 – Determinants of Minority-Owned Bank Presence

Table 2 also provides the mean value of each variable for counties with and without minority-owned banks. Counties with minority-owned banks have higher overall employment growth rates (difference: 0.45 p-value < 0.01), though lower minority employment growth rates (difference: -

0.89%; p-value < 0.01). This indicates minority-owned banks are located in communities with stronger overall economic growth, though with weaker minority employment growth. These counties also have significantly more minority individuals (26.84%; p-value < 0.01). Of course, selection is an issue here; the remaining variables are also significantly different between the groups.

In Table 3, we provide four regressions, which identify determinants of minority-owned bank presence. Model 1 includes socioeconomic, demographic, and industrial composition variables, while Model 2 also includes *Minority Ancestry* (our instrumental variable used in later analyses in Section 3.6). *Minority Ancestry* is the proportion of residents with ancestry classified as a minority (ACS). We classify residents as having minority ancestry if their ancestry is African, Hispanic, Asian-Pacific, or Arab, based on data from the U.S. Census ACS, which reports the first ancestry of people residing in a county. Model 3 includes socioeconomic, demographic, industrial composition, and bank health variables, while Model 4 also includes *Minority Ancestry*. These analyses reveal several trends. Conditional on the proportion of minority residents, *Minority Ancestry* positively impacts the *Minority Bank Market Share*. This is a key result. *Minority Ancestry* is determined many years prior to our sample, local residents cannot influence it, and it is expected to have little direct impact on economic growth or resilience, yet it impacts the *Minority Bank Market Share*. We also observe that *Bachelor's Degree, Arts, Entertainment, and Recreation, Capital Adequacy*, *Sensitivity to Market Risk* and *Deposits in Metropolitan Regions* are positively correlated with the *Minority Bank Market Share*, while *Population Density*, *Median Household Income (Natural Log), BHC Ownership,* and *OCC Regulation* are negatively correlated with the *Minority Bank Market Share*. In sum, these results provide insight into the determinants of the location of minority-owned banks.

3.5 – Effects of Minority-Owned Bank Market Share on Economic Growth and Resilience – OLS and Propensity Score Matching (PSM) Regression Results

Table 4 provides the main estimation results for equation (1) (state and year fixed effects excluded for brevity). Here, we test whether minority-owned banks impact economic growth and resilience for the community overall, as well as for minority and nonminority individuals (Whites). We test these by constructing the dependent variable, the employment growth rate, using each group (Overall: Models 1–2; Minority: Models 3–4; White: Models 5–6). Here, we provide two specifications for each dependent variable: (1) the Full Sample, which includes all counties within our final data set and (2) the PSM Sample. The purpose of the second specification is to mitigate selection concerns. In this specification, we use characteristics in 1990 (minority population, proportion of workers in the finance industry, per capita income, total population, rurality) to predict the probability of having a minority-owned bank and limit the sample to those counties on common support. We also limit the sample to those counties that either contain a minority-owned bank or are adjacent to a county containing a minority-owned bank. In the PSM sample, we compare counties that were similar along a range of characteristics in 1990 and evolved to either establish a minority-owned bank or did not. The purpose of this step is to reduce the bias in the observable characteristics. We test this in **Figure S1**, showing that the bias in several key socioeconomic and demographic variables is reduced. In sum, across specifications, we find evidence consistent with minority-owned banks strengthening economic resilience, though not economic growth.

The *Minority Bank Market Share* coefficient estimates reflect how minority-owned banks influence employment growth through regular business cycle times. The coefficient estimates do not consistently reach statistical significance. Thus, these results do not provide evidence consistent with minority-owned banks contributing to economic growth through regular business cycle times. We do not suggest that minority-owned banks do not have positive economic impacts on their communities through regular business cycle times. Rather, our analyses do not provide strong evidence consistent with this; other analyses may capture positive impacts.

The *Minority Bank Market Share* × *GFC* coefficient estimate is positive and statistically significant across specifications, thus providing evidence that minority-owned banks positively impacted economic resilience through the GFC. These results reveal additional points here as well. First, the magnitude of the coefficient estimates is the largest in the minority specifications (Models 3–4). This indicates minority-owned banks strengthen economic resilience the most within their own communities. Second, the coefficient estimates are consistently positive in the overall and White specifications as well (Models 1–2; 5–6). This indicates minority-owned banks have positive impacts beyond their own communities.

To consider the economic significance of the minority-owned bank market share on economic resilience through the GFC, we use the PSM Sample *Minority Employment* coefficient estimate (Model 4: 63.72). This coefficient estimate is smaller in magnitude relative to the Full Sample coefficient estimate (Model 3: 111.9), thus the following analysis provides a conservative estimate of marginal effects. This coefficient estimate indicates relative to normal times, through the GFC, counties with a 100 percentage point increase in *Minority Bank Market Share* experienced a 6.37 percentage point higher-minority employment growth. Given the minority employment growth rate (-1.30%) over the GFC, this value is significant in an economic sense. In the average county (population: ~140,000; minority employees: ~13,000), we expect this to result in approximately 800 more employed minority individuals per year. Applied to the entire sample, this would result in ~1.9 million more employed individuals per year (800 minority individuals/county × 2,316 counties = ~1.9 million employed individuals). Alternatively phrased, our analyses indicate that, if all nonminority-owned banks in the U.S. behaved in a manner consistent with minority-owned banks, at least 1.9 million more minority individuals would have maintained employment through each year of the GFC.

The *Minority Bank Market Share* × *COVID-19 Crisis* coefficient estimate provides similar results. In the minority specification, this coefficient estimate is positive and statistically significant in each specification. Thus, these results also provide evidence consistent with minority-owned banks strengthening economic resilience through the current COVID-19 crisis. Similar to the previously described results, we also observe positive impacts for overall and White employment; however, these latter coefficient estimates reach statistical significance only in the PSM specification. Thus, although these results suggest minority-owned banks have a positive impact beyond their own communities through the current COVID-19 crisis, we treat these results with caution.

To consider the marginal effect of the minority-owned bank market share on economic resilience through the COVID-19 crisis, we use the PSM Sample *Minority Employment* coefficient estimate (Model 4: 79.21). This coefficient estimate indicates relative to normal times, through the COVID-19 crisis, counties with a 100 percentage point increase in *Minority Bank Market Share* experienced a 7.92 percentage point increase in minority employment growth. Given the minority employment growth rate (-2.55%) over the COVID-19 crisis, this value is significant in an economic sense. In the average county (population: ~140,000; minority employees: ~13,000), we expect this to result in approximately 1,000 more employed minority individuals per year. Applied to the entire sample, this would result in ~2.4 million more employed minority individuals per year

(1,000 minority individuals/county × 2,316 counties = ~2.4 million employed individuals). Alternatively phrased, our analysis indicates that if all banks in the U.S. behaved in a manner consistent with minority-owned banks, at least 2.4 million more minority individuals would have maintained employment through each year of the COVID-19 crisis.

We also provide the coefficient estimates for the socioeconomic, demographic, and bank health control variables. These coefficient estimates reflect the impact of the given variable on the employment growth rate in regular business cycle times and demonstrate several key trends. First, the minority share of the population negatively impacts the minority employment growth rate through regular business cycle times, and several other socioeconomic and demographic factors (*Population Density*, *HPI*, *Median Household Income*, *Manufacturing*) consistently have an impact across groups. Second, in the nonmatched samples (Models 1, 3, and 5), many of the bank health coefficient estimates are significant; however, these effects either disappear or are reduced in magnitude in the matched sample (Models 2, 4, and 6). This builds confidence in our matching technique. In sum, the first test of our hypotheses indicates minority-owned banks strengthen economic resilience in their own communities, as well as nonminority communities, through both the GFC and the COVID-19 crisis.

3.6 – Additional Identification Tests: PSM and Instrumental Variable Analysis

As previously outlined, in Table 4 (Models 2, 4, and 6), we use a PSM technique to address selection concerns. This technique mitigates selection concerns around the local community — minority-owned banks may locate in unique areas. A second selection concern exists here — minority-owned-banks may be unique. In particular, minority-owned banks are relatively small. In 2020, 84.8% (89 of 105) of minority-owned banks had fewer than \$2 billion in assets. Thus, in our prior results, the observed effect may be driven by differences in bank behavior across the size dimension. To mitigate this concern, we conduct two additional PSM analyses in which we instead confine the universe of banks to those with less than \$10 billion (\$2) billion in assets (see **Table 5** for results). Thus, in these analyses we limit our sample to banks that are similar in size to our banks of interest. In these analyses, our coefficient estimates are driven by competition between similarly sized banks. These results are statistically and economically significant and highly consistent with our main findings. Notably, the magnitude of the coefficient estimates increase as more banks are included in the analysis. This result is consistent with expectations — the coefficient estimates estimated in the more limited samples use the comparison between minority-owned-banks to similarly sized counterparts. We expect smaller banks to more effectively use soft information, and thus better compete with minority-owned banks. Thus, since the sample is limited to smaller banks, we expect the effect size to be diminished.

Reverse causality is also a concern here. Local conditions, economic and otherwise, may drive the location of minority-owned banks. To address this concern, we use an instrumental variable (IV) model as an additional identification strategy (see **Table 6** for results). Our instrument, *Minority Ancestry*, represents the proportion of residents with ancestry classified as a minority (ACS). As mentioned in Section 3.4, we classify residents as having minority ancestry if their ancestry is African, Hispanic, Asian-Pacific, or Arab, based on data from the U.S. Census ACS, which reports the first ancestry of people residing in a county. We expect counties with a higher proportion of people with minority ancestry to be more likely to have a higher proportion of minority-owned banks. The key terms in our model are the *Minority Bank Market Share* and the interactions between the *Minority Bank Market Share* and the *GFC* as well as *COVID-19 Crisis*. Thus, we construct three instruments: (1) *Minority Ancestry;* (2) *Minority Ancestry* × *GFC;* and (3) *Minority Ancestry* × *COVID-19 Crisis,* resulting in three separate First-Stage IV equations (Models 1–3).

This identification strategy relies on two assumptions: (1) *Minority Ancestry* influences the *Minority-Bank Ownership Share*; (2) *Minority Ancestry* only impacts economic resilience through the *Minority Bank Market Share*. We provide empirical evidence (see Table 5; Models 1–3) to support the first assumption. Each of the key IV First-Stage coefficient estimates, *Minority Ancestry* × *GFC and Minority Ancestry* × *COVID-19 Crisis,* are sufficiently strong (F-Statistic > 10). A violation of the second assumption would require *Minority Ancestry* to impact economic growth or resilience, either directly or indirectly. Ancestry is established well in advance of minority-bank formation, and current residents cannot influence it. Furthermore, it is not expected to directly impact current economic outcomes in a local area. Finally, given we condition our results on time-invariant state-level characteristics, as well as a battery of county-level time-variant characteristics, we mitigate concerns a violation of the second assumption occurs via these characteristics.

Our main results hold for overall and minority employment growth, further strengthening confidence in our results. Notably, the *Minority Bank Market Share* coefficient estimate is consistently positive and significantly different than zero. This indicates that *Minority Bank*

Market Share positively impacts employment growth in regular business cycle times. This model estimates the local average treatment effect. Here, this represents the impact of the *Minority Bank Market Share* on employment growth, for those counties induced to have higher shares by *Minority Ancestry.* Alternatively phrased, although a causal claim can be made here, it narrows the relevance of the conditions. Thus, we treat this coefficient estimate with caution.

3.7 – Additional Identification and Other Robustness Checks

To address variable construction and omitted variable concerns, we conduct several robustness checks. In our first two robustness checks, we consider variable construction concerns by constructing alternative specifications of the GFC and minority-owned banks.

In the first robustness check, we construct the GFC indicator using an alternative definition. In our main results, we define the GFC as occurring between 2007 and 2009. The GFC definitions we use (NBER Business Cycle Committee: December 2007–June 2009; Berger and Bouwman, 2013: Q3 2007–Q4 2009) each indicate the crisis began in 2007. Thus, our current variable captures some noncrisis times, and a more appropriate definition may be 2008–2009. In our first robustness check, we use this alternative definition (see Table S1.A), and our main results hold.

In the second robustness check, we construct the *Minority-Owned Bank Share* variable using an alternative definition. In our main results, minority-owned banks are identified from the Call Reports. The FDIC maintains a list of Minority Depository Institutions (MDIs), which relies on a similar, though unique definition. The MDI designation has two requirements: (1) the majority of the voting stock be owned by minorities or (2) the board of directors is comprised predominately of minorities and the community the bank serves is predominantly minority (FDIC 2021). As a robustness check, we use this alternative definition to construct our minority-owned bank market share (see **Table S1.B**), and our main results hold.

In our main results, our treatment group consists of banks owned by racial and ethnic minorities, while women-owned banks are included in the control group. A concern here is that the observed effect is driven by banks owned by racial and ethnic minorities outperforming women-owned banks. To address this concern, we also consider an alternative specification where we exclude women-owned banks from the control group (see **Table S1.C**). Our main results hold.

In our main results, we use a PSM technique to reduce selection bias. This specification uses one neighbor, without replacement on common support. To build confidence in this specification, we conducted one more analysis using another PSM specification. This specification conducts the matching with three neighbors, with replacement. We provide the results of these analysis in **Table S1.D**, and our main results hold.

Finally, it is also possible racial biases serve as an omitted variable in this analysis. Communities with higher minority-owned bank market shares may form in regions with lower racial biases. Communities with lower racial biases may also have stronger economic growth and resilience. To consider this, we conduct a series of regressions that include measures of racial bias: fair housing law, interracial marriage, racial bias index, slave state, racial animosity index, and Black Lives Matter protests (see Table S2.A for variables and definitions, and Table S2.B-D for results). These measures are primarily constructed at the state level; thus, we remove state-level fixed effects in these specifications. Our main results hold, indicating racial biases do not drive the observed result.

4. Underlying Channels: Bank-Level Analysis Using Call Reports

4.1 – Econometric Model

Our proposed mechanism through which minority-owned banks influence economic growth and resilience is the credit supply. To consider this, we test whether minority-owned banks lend to firms at higher rates in regular business cycle times, as well as through the GFC and the COVID-19 crisis in comparison to regular business cycle times. We estimate the effect of minority-bank ownership status on small business lending activity in regular business cycle times and through each economic downturn using the model provided below:

$$(2)\ \Delta\ Small\ Business\ Lending_{bt} = \theta_1 \times Minority\ Bank_{bt} + \theta_2 \times Minority\ Bank_{bt} \times GFC_t + \theta_3 \times Minority\ Bank_{bt} \times COVID - 19\ Crisis_t + \lambda \times U_{bt-1} + Year_t + \xi_{bt}.$$

We capture the credit supply using $\Delta\ Small\ Business\ Lending_{bt}$, which represents the annual change in small business lending activity, as measured in dollar amounts. $Minority\ Bank_{bt}$ represents the minority-bank ownership status (equal to one if the bank is minority owned, and zero otherwise). GFC_t represents the GFC (equal to one 2007–2009 and zero otherwise). $COVID - 19\ Crisis_t$ represents the COVID-19 crisis (equal to one in 2020 and zero otherwise). The key effects here are minority-owned bank status ($\varphi_1 \times Minority\ Bank_{bt}$) as well as the interactions between this and the GFC ($\varphi_2 \times Minority\ Bank_{bt} \times GFC_t$) and the COVID-

19 crisis ($\varphi_3 \times Minority\ Bank_{bt} \times COVID-19\ Crisis_t$). The minority-owned bank market share coefficient (φ_1) represents the effect of minority-owned bank ownership status on small business loan activity in regular business cycle times. The coefficients of the interaction terms ($GFC\colon \varphi_2; COVID-19\colon \varphi_3$) represent the effect of minority-owned bank ownership on small business lending in each crisis relative to regular business cycle times. Given that the model includes year fixed effects, *GFC* and *COVID-19 Crisis* indicators do not appear in noninteracted form.

Consistent with the previous analyses, we incorporate three series of control variables here: (1) bank health variables, (2) socioeconomic and demographic controls, and (3) industrial composition variables. Using branch-level data, we aggregated county-level socioeconomic, demographic, and industrial composition characteristics up to the bank-level based on the banks' deposit shares in different local markets of operation. Thus, these variables represent the characteristics of the branch network. We use the same socioeconomic, demographic, and bank health variables as outlined in the county-level analysis (see Table 1 for a list and definitions).[5]

4.2 – Data Set Construction

We collected financial data for each commercial bank in the U.S. from the FFIEC regulatory Call Reports (9,301). Our sample is limited to commercial banks (RSSD9331 = 1) with nonmissing data for the key variables in the analysis over 2006–2020; thus, the final data set has 58,443 observations for 5,573 banks (59.9% of all banks). For all of the banks in our sample, we obtain Call Report data for each quarter and construct the annual value for each variable using the mean value of all quarters over each year.[6]

4.3 – Summary Statistics

Table 7 provides bank-level summary statistics, both overall and by bank ownership status. This provides information on differences between minority and nonminority-owned banks. Notably, the *Small Business Loan Activity Growth* is higher for minority-owned banks. In terms of assets and CAMELS, we find minority-owned banks have fewer assets, higher *Capital Adequacy*, *Asset Quality*, *Management Quality*, and *Sensitivity to Market Risk* while minority-owned banks have

[5] In unreported results, using an alternative definition for minority-ownership status (MDI banks) yields consistent findings.
[6] In unreported results, we also use variables as of the fourth quarter in each year instead, and our main results hold.

lower *Earnings* and *Liquidity*. Minority-owned banks have more *Deposits in Metropolitan Regions*, are located in less concentrated markets, and are younger. They are also less likely to be owned by a bank holding company. The results demonstrate minority-owned banks differ significantly from nonminority-owned banks across a range of outcomes.

4.4 – Regression Results

Table 8 provides the main estimation results for equation (2) (year fixed effects excluded for brevity). We use the overall small business lending growth as the dependent variable across specifications. In Models 1–3, we incorporate additional sets of control variables in each subsequent model, thus testing our main hypotheses across several specifications. In Model 4, we examine whether minority-owned banks have stronger effects in counties with higher-minority populations. We do this by interacting our key coefficients with bank exposure to *High Minority Area*, an indicator variable equal to one when the minority population exceeds the national mean and is zero otherwise.

The *Minority Bank* coefficient estimate is consistently negative, though not consistently statistically significant. This suggests that in regular business cycle times, minority-owned banks lend less to small businesses than nonminority-owned banks. This may be driven by demand, rather than supply; minority-owned banks may operate in markets with less small business lending activity.

In Models 1–3, the *Minority Bank* × *GFC* coefficient estimate is positive and statistically significant, thus indicating that minority-owned banks' small business lending activity was higher through the GFC. The coefficient estimate indicates the small business lending activity of a *Minority Bank* in the GFC continued to grow at approximately 13 percentage points, relative to a nonminority-owned bank in regular business cycle times. Given the average annual small business lending amount ($72.34 million), this implies approximately $9.40 million in additional credit availability per bank. Applied to the entire sample, this implies approximately $52.41 billion in additional capital availability per year. In short, minority-owned banks maintained their small business lending activity at higher rates through the GFC. If nonminority-owned banks had acted in a manner consistent with minority-owned banks, significantly more capital would have been available to businesses.

In Models 1–3, the *Minority Bank* × *COVID-19 Crisis* coefficient estimate is positive, though not statistically significant, thus suggesting minority-owned banks lent more through the

COVID-19 crisis. Consistent with our prior county-level results, collectively, these results provide suggestive evidence that minority-owned banks' small business lending activity differed substantially from nonminority-owned banks through the COVID-19 crisis as well.

One of our central hypotheses is that minority-owned banks can more effectively acquire information via a shared minority identity. Based on this, we expect minority-owned banks to lend at higher rates in areas with higher proportions of minority residents and minority-owned firms. We test this in Model 4 by inserting an additional set of interaction terms, as described previously. The *Minority Bank* × *High Minority Area* coefficient estimate is negative and significantly different than zero. This indicates minority-owned banks with branch networks located in high-minority neighborhoods lend at lower rates.

The key coefficient estimate here, *Minority Bank* × *High Minority Area* × *GFC*, is positive and significantly different than zero. This indicates minority-owned banks with branch networks located in counties with higher proportions of minority residents continued lending at higher rates through the GFC. The coefficient estimate indicates the small business lending activity of a *Minority Bank* located in a *High Minority Area* through the *GFC* continued to grow at approximately 21.34 percentage points relative to a *Non-Minority Bank* located in a *Low Minority Area* through regular business cycle times. Relative to the mean *Small Business Loan Growth* (11.12%), this value has economic significance.

The second key coefficient estimate here, *Minority Bank* × *High Minority Area* × *COVID-19 Crisis*, is positive, though not significantly different than zero. This suggests minority-owned banks with branch networks located in counties with higher proportions of minority residents continued lending at higher rates through the COVID-19 crisis. Collectively, these results provide evidence that minority-owned banks improved economic resilience through the credit supply. They achieve this by maintaining the credit supply in minority communities.

5. Underlying Channels: Additional Analyses

5.1 – Small Business Lending Analysis Using the Community Reinvestment Act Data

The primary channel through which we expect minority-owned banks to impact the local economy is the small business credit supply. Our prior analyses demonstrate minority-owned banks enhance economic resilience using county-level analyses, and they continued to lend at higher rates through crises using bank-level analyses. It is possible minority-owned banks have branch locations in regions that differ from nonminority-owned banks in ways that we are unable to account for in our previous analyses.

To mitigate this concern, in **Table 9**, we conduct a series of analyses at the bank-county-year level using Community Reinvestment Act (CRA) Data. These analyses enable us to compare the credit supply of banks operating within the same local environment. This data set provides information on loan originations to commercial and industrial (C&I) firms for 2006–2020. These data include bank loans with sizes up to $1 million and specifies loans to businesses with less than $1 million revenue, denoting small businesses. While the Call Report includes both new originations and loans from other earlier periods, this data set includes new loan originations, making it easier to derive final conclusions on credit supply. To condition for local credit demand, we include state fixed effects, and similar to the prior analyses, we include many county-level socioeconomic, demographic, and industrial control variables. Similar to prior analyses, to condition on bank health, we also include bank-level health variables.

We match CRA data to bank characteristics from the regulatory Call Reports, including minority ownership information and county characteristics. We use the same bank and county characteristics as of the year-end immediately prior to the loan origination year, as well as state, and year fixed effects. Our analytic sample has 621,449 total bank-county-year observations covering 918 banks and 2,551 counties that have CRA information and nonmissing data for the key variables. We use a similar econometric model as noted previously in equation (2), but we use bank-county-year level data on small business loan originations as dependent variables, along with the previously noted bank minority indicator and the interactions with the two crises. We also include bank and county controls, as well as state and year fixed effects to condition on unobservable factors.

In Model 1, the *Minority Bank* coefficient estimate is negative and significantly different than zero. This indicates relative to nonminority-owned banks, minority-owned banks are less engaged in small business loan origination. We observed similar results in prior analyses; however, given those results were observed at the bank-level, they may have reflected local demand. These results are conditioned on local demand, indicating minority-owned banks may be less engaged in small business loan origination in regular business cycle times. The *Minority Bank* × *GFC* and *Minority Bank* × *COVID-19 Crisis* coefficient estimates each indicate minority-owned banks continued to lend at higher rates through each crisis. Again, these results condition on local credit demand. Thus, these results demonstrate, conditional on local credit demand, minority-owned banks continued to lend at higher rates through each crisis.

Similar to prior analyses, in Model 2, we estimate the effect of minority ownership on the credit supply during the two crises in communities with higher proportions of minority residents. Consistent with prior results, the key coefficient estimates here, *Minority Bank* × *High Minority Area* × *GFC* and *Minority Bank* × *High Minority Area* × *COVID-19 Crisis* are each positive and significantly different than zero. These results provide evidence consistent with our prior results — minority-owned banks continue lending at higher rates in areas with a higher proportion of minority residents through crises.

We expect minority-owned banks and firms to more effectively communicate soft information, which we observe through smaller loans. In Models 3–8, we consider this by replicating the analyses conducted in Models 1–2 with various loan sizes. In the odd-numbered models (Models 3, 5, and 7), we test our main hypotheses, whether minority-owned banks continued lending at higher rates through each crisis. In the even-numbered models (Models 4, 6, and 8), we test our secondary hypotheses, that minority-owned banks lend at higher rates through these crises in communities with a higher proportion of minority residents.

In Models 3, 5, and 7, the *Minority Bank* × *GFC* and *Minority Bank* × *COVID-19 Crisis* coefficient estimates are positive and reach statistical significance in the < $100K and $100–$250K specifications, though the magnitude is larger in the < $100K specification. This indicates that our earlier results are primarily driven by the smallest of loans (< $100K). This may be consistent with minority-owned banks enhancing economic resilience via shared-identity using specific soft information. This is because the smallest loans are often regarded as a proxy for small firm-bank soft information usage in the relationship lending literature mentioned previously.

Similar to previous analyses, in Models 4, 6, and 8, we test whether minority-owned banks lend at higher rates through each crisis in communities with higher proportions of minority residents. The *Minority Bank* × *High Minority Area* × *GFC* and *Minority Bank* × *High Minority Area* × *COVID-19 Crisis* coefficient estimates are positive and consistently reach statistical significance in the <$100K and $100–$250K specifications, though the < $100K specification coefficient estimates are larger in magnitude. This is a key result; it provides evidence consistent with minority-owned banks continuing to lend via small loans through crises in neighborhoods with a higher proportion of minority residents, conditional on local demand. In sum, it provides rigorous evidence consistent with our central hypotheses, driven by shared-identity, minority-owned banks enhance economic resilience via specific soft information.

5.2 – Residential Mortgage Lending Using the Home Mortgage Disclosure Act Data

In addition to the small business credit supply, minority-owned banks could enhance economic resilience via the residential mortgage credit supply. By maintaining the residential mortgage supply, minority-owned banks could directly enhance economic resilience by ensuring economic activities associated with homeownership (e.g., construction) continue. They could indirectly enhance economic resilience by ensuring that homeowners gain access to home equity, which can contribute to wealth accumulation and can also be used as a source of business credit. To consider this, in **Table 10**, we analyze the effects of bank-level minority ownership on household lending activity, namely, mortgage loan approvals and interest rate. To conduct these tests, we use the Home Mortgage Disclosure Act (HMDA) data, which represent approximately 90% of mortgage lending in the U.S.

We match Call Report bank data with the HMDA mortgage application data using the lender file developed by Robert Avery. We follow the prior literature to filter the mortgage applications data by excluding: (1) loans insured by government agencies (i.e., FHA, VA, FAS, or RHS), (2) refinancing and home improvement loans, (3) loans neither approved nor rejected, (4) loans to finance nonowner-occupied units, and (5) loans sold by the lender upon origination to another party. Our final data set contains information on 3,034,722 loan applications for households in 2,532 counties sent to 817 banks.

We use a similar econometric model as in equation (2), but we use loan-bank-county level data on household mortgage application, origination, and interest rate outcomes, along with the previously noted bank minority indicator and the interactions with the two crises. In addition to the bank and county characteristics used in the prior models, we also control here for additional loan and household characteristics (loan size, borrower income, coapplicant indicator, race, and gender). Whereas prior analyses conditioned on the local characteristics and credit demand, these analyses condition on individual characteristics. We include state and year fixed effects to control for unobservable factors.

In these regressions, we use a series of dependent variables (loan approval (Models 1–2), origination (Models 3–4) and interest rate (Model 5)) to investigate this.[7] We find minority-owned banks consistently increase household mortgage loan approvals and originations during the GFC. However, they do not affect or decrease these outcomes as well as increase interest rates during the COVID-19 crisis.[8] The *Minority Bank* coefficient estimate is positive and significantly different than zero, indicating minority-owned banks are more likely to approve and originate loans through regular business cycle times. The *Minority Bank* × *GFC* coefficient estimate is positive and significantly different than zero across loan approval and origination specifications. This indicates minority-owned banks continued to approve and originate home mortgages through the GFC at higher rates relative to nonminority-owned banks. Given some categories of home mortgages were contributing factors to the GFC, this is a particularly notable result.

Similar to prior results, in secondary models (Models 2 and 4), we also interact each key variable with *Minority HH,* a minority household indicator variable. The key coefficient estimates here are *Minority Bank* × *Minority HH* × *GFC* and *Minority Bank* × *Minority HH* × *COVID-19 Crisis*. The former is positive, though not significantly different from zero. This provides suggestive evidence that minority-owned banks continued lending to minority applicants at higher rates through the GFC. The latter is positive and significantly different than zero. This provides evidence that minority-owned banks continued lending to minority applicants at higher rates through the COVID-19 crisis. These results are consistent with minority-owned banks using shared minority-identity information obtained through superior communication with minority borrowers to maintain the credit supply.

6. Conclusions

In the past two decades, the U.S. has experienced two severe crises, which caused significant economic downturns and damage to local communities. Some local communities were more economically resilient and better able to withstand the crisis, thus experiencing fewer employment losses. Our research demonstrates that minority-owned banks presence is one important factor that helped mitigate minority employment losses through the GFC, and in most cases, during the

[7] We use the OLS method for our analysis of household mortgage loan approvals. Our choice of a linear rather than nonlinear model of loan approvals is in line with recent research and is motivated by the fact that nonlinear models tend to produce biased estimates in panel data sets with many fixed effects, leading to incidental parameter problems and inconsistent estimates.

[8] Model 5 has fewer observations because models include loans from 2018 onward, which report interest rates.

COVID-19 crisis. These results add to recent research on community banks and economic outcomes (Petach and Weiler, 2019; Levine, Lin, and Winsi, 2020; Petach, Weiler, and Conroy, 2021; Langford and Feldman, 2021), by showing that bank ownership characteristics also matter for economic resilience.

We also find that during times of crisis, minority-owned banks have the additional effect of mitigating nonminority employment losses. In our main specification, we condition our results on a battery of socioeconomic, demographic, and bank health variables. This specification tests minority-owned banks against all banking establishments. These results stand up to two identification strategies: (1) a PSM technique, which limits our sample to those counties that either contain minority-owned banks or are adjacent to those containing minority-owned banks and had similar characteristics in 1990, and (2) an IV technique, where we instrument for minority-bank market share using minority ancestry. In sum, we demonstrate minority-owned banks mitigate employment losses across both the GFC and COVID-19 crisis and these results are robust.

We demonstrate that the mechanism that enhances economic resilience is the credit supply; minority-owned banks maintain the small business and residential real estate credit supplies through each crisis. In the small business credit supply, stronger effects are observed for regions with a higher proportion of minority residents. In the household credit supply, stronger effects are observed for minority households. Each result is consistent with minority-owned banks using more effective communication to acquire and process information via a shared minority identity.

These results are consistent with both supply-side and demand-side mechanisms. On the supply side, minority-owned banks more effectively communicate with borrowers, providing a more nuanced evaluation of risk and reduce taste-based unfavorable racial discrimination. On the demand side, minority borrowers might also be less likely to strategically default on loans from minority-owned banks. We are unable to disentangle these using our available data. We encourage future research that distinguishes between these mechanisms.

The crises studied here differ substantively across a range of dimensions, including causes, policy solutions, depth, and duration. While the GFC originated within the financial sector, the COVID-19 crisis was a public health crisis with economic implications. The primary policy solution for the GFC, TARP, and assisted banks, while the key policy solution for the COVID-19 crisis and the PPP directly supported the real sector. Finally, while the GFC was protracted and less severe, the COVID-19 crisis was short and more severe. These characteristics point to unique circumstances driving these crises; thus, minority-owned banks may impact the economy differently through each crisis. Our findings are consistent with this: Minority-owned banks show even more positive impacts through the GFC than through the COVID-19 crisis.

These results have implications for both finance and policy. First, our research demonstrates that bank ownership characteristics are an important factor in driving lending decisions through economic downturns. That is, minority-owned banks behave differently than nonminority-owned banks through economic downturns, a relevant point for researchers.

In particular, we note two key results: (1) minority-owned banks strengthen economic resilience for both minorities and nonminorities (Whites), despite effects being larger for minorities, and (2) minority-owned banks have stronger impacts on economic resilience in communities with more minority residents. The first key result may be explained by minority-owned banks simply not discriminating. They approve loans at higher rates through crises and at similar rates for minority and nonminority-owned firms. "A rising tide may also lift all boats": Minority-owned banks, which strengthen minority-owned firms, have the downstream effect of positively impacting nonminority employment, too. This distinction points to the need for further research to distinguish between the two mechanisms. The second result is consistent with minority-owned banks providing stronger relief to minority business owners and homeowners. This points to financial institutions with stronger community ties enhancing economic resilience. It also points to minority-owned banks being a potential conduit for strengthening the economic resilience of minority communities.

Finally, results imply that if all U.S. banks behaved in a manner consistent with minority-owned banks through the GFC, at least 1.9 million more minority jobs would have been kept and $50 billion more in credit extended to small businesses on an annual basis. In sum, these results demonstrate the importance of minority-bank ownership in economic terms.

Notably, we do not find strong evidence consistent with minority-owned banks contributing to economic growth through regular business cycle times. It is not possible to econometrically identify and/or analyze a nonresult. However, these findings suggest that minority-owned banks do not promote economic growth for minorities through regular business cycle times. We do not suggest minority-owned banks have no long-term positive impacts on the communities they serve, simply that the analyses conducted here do not provide strong evidence of this through regular business cycle times. This points to the need for future research.

While these results are significant and robust, they have several caveats. One caveat for our analyses is that in order to construct the minority category, we aggregate several racial and ethnic minorities into one classification. This decision was driven by the small number of minority-owned banks, and associated statistical power problems; however, the analysis may oversimplify nuanced differences between groups. We encourage future research to consider differences across minority groups using enhanced data sets. In our most robust specifications, we either limit our sample using the PSM technique or alter the interpretation of the coefficient estimate using the IV model. Thus, we estimate a local average treatment effect, limiting the generalizability of our results. Nonetheless, these results demonstrate the importance of minority-owned banks in their communities.

This research focuses on banks, which is only one aspect of small business finance. Banks represent an intermediate source of finance in terms of information opacity, collecting both hard and soft information. Notably, our overall small business credit supply results are driven by small loans (< $100K). By finding that small loans, which embody support to small firms, are the primary channel through which minority-owned banks act, our study is relevant to how small businesses behave through economic shocks. Future studies should consider how the ownership qualities of other sources of finance (e.g., venture capital) impact their financing behavior, both overall and through crises. This result, coupled with the employment results, also demonstrates how minority-owned banks impact the overall economy via small loans. Alternatively phrased, this result demonstrates how small amounts of capital can have large employment gains.

The research presented here provides evidence demonstrating the role of minority-owned banks in enhancing economic resilience and highlight the importance of policy that encourages the formation and survival of minority-owned banks. Our results confirm the Maggie Lena Walker quote at the beginning of the paper, that communities are strengthened when minorities put their money together. Finally, results may have broader implications beyond the U.S. banking landscape alone. It may suggest that a shared minority identity mechanism along many different dimensions beyond race and ethnicity (e.g., gender, orientation, age, income status) could apply to banks worldwide that researchers may consider. Such shared minority identity may be powerful in unleashing positive economic benefits to communities.

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Figure 1: Number of Minority-Owned Banks over Time

This figure shows the evolution over time of the number of minority-owned (≥ 50% minority ownership) banks over our sample period 2006–2020. *Minority* refers to any of the categories of ownership denoted as Black, Hispanic, Asian, and Other (Native-American, Eskimo, Aleut, Arab, Multi-Racial). In the figure, data on minority bank ownership come from the FFIEC Call Reports.

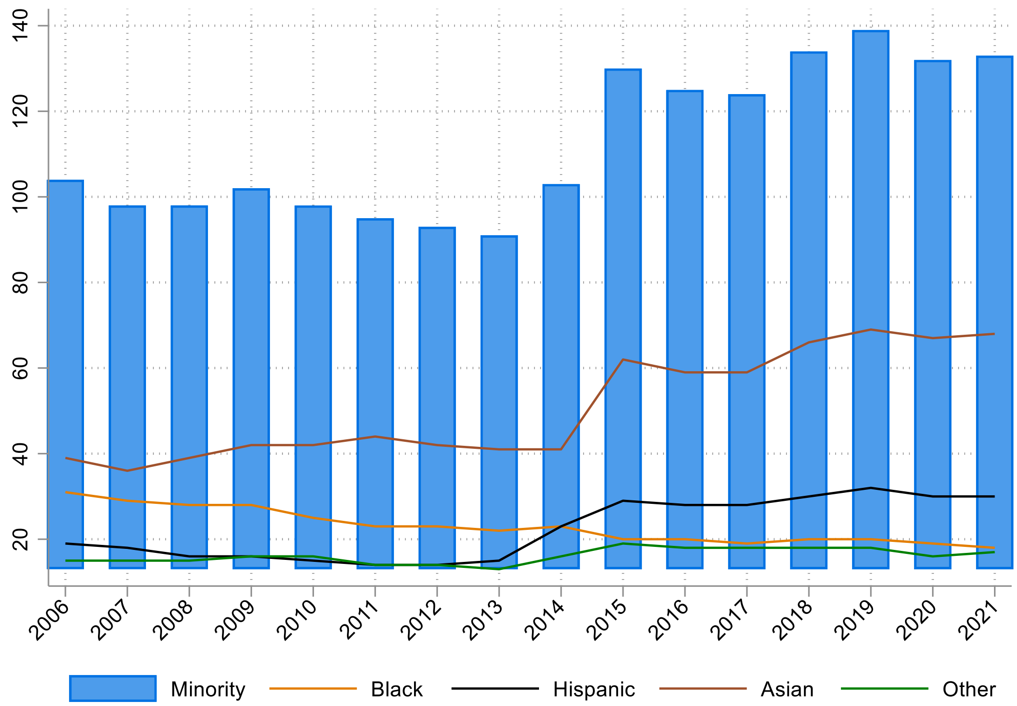

Figure 2: Location of Minority-Owned Banks Across U.S. Counties

This figure shows a county-level heat map for the location of minority-owned banks in 2020 via an indicator variable equal to one when a county has a minority-owned bank present, and zero otherwise. *Minority* refers to any of the categories of ownership denoted as Black, Hispanic, Asian, Native-American, Eskimo, Aleut, Arab, Multi-Racial. In the figure, blue shows counties where we have minority-owned banks, white shows counties where we do not have minority-owned banks, while gray indicates counties with no data. Data on minority bank ownership is from the FFIEC Call Reports, while local bank presence is from the FDIC Summary of Deposits.

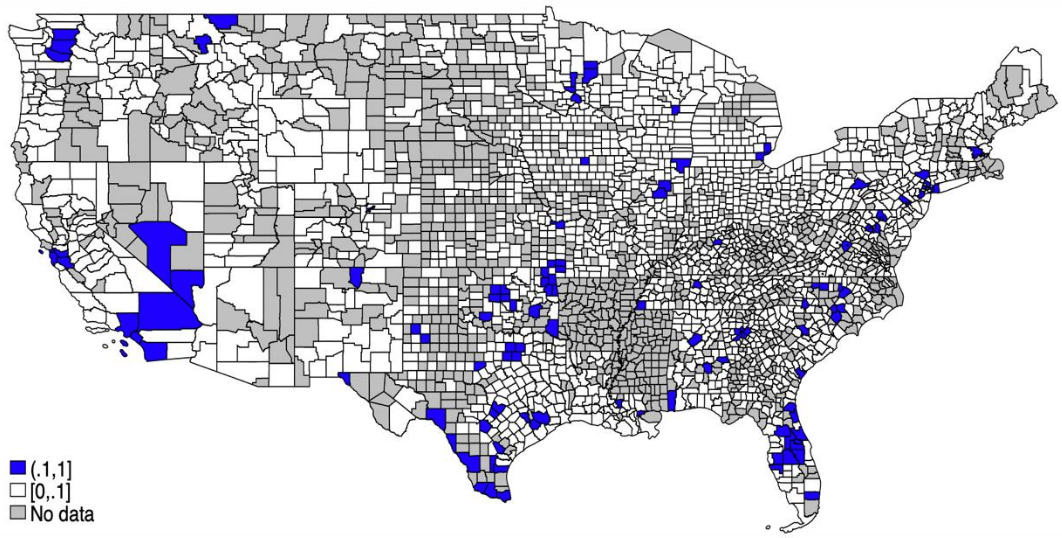

Figure 3: Minority Population (%) Across U.S. Counties

This figure shows a county-level heat map for the minority proportion of the population in 2020. In the figure, blue shows counties where we have higher percent of minority population (minority represents any population that is not reported as White), white shows counties where we have little to no percentage of minority population, while gray indicates counties with no available data. Data on minority population is from the U.S. Census ACS.

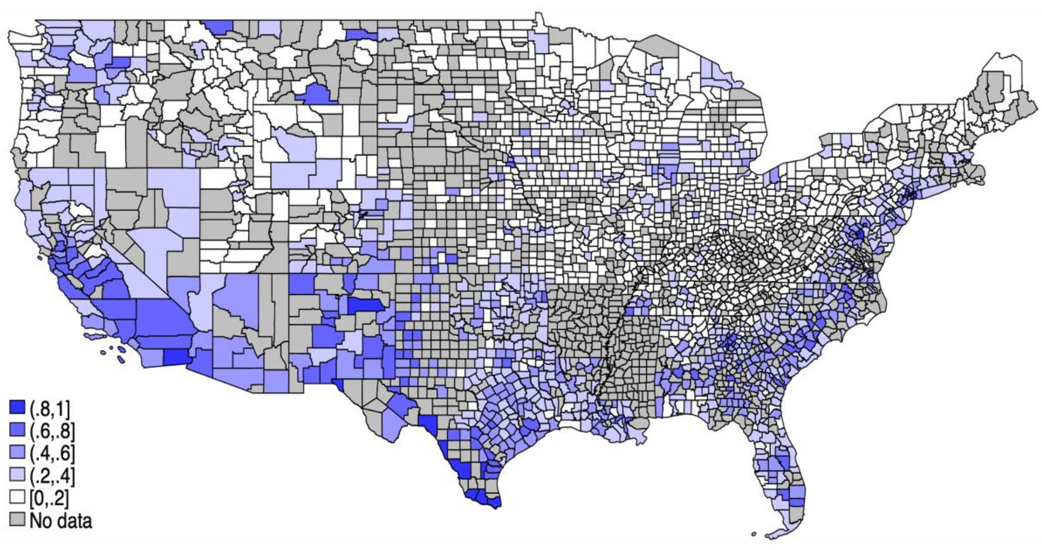

Table 1. Variable Definitions

This table provides definitions for the variables used in our analyses. Panel A refers to independent, dependent, socioeconomic and demographic controls, while Panel B refers to bank health and other controls.

Panel A. Independent, Dependent, Socioeconomic and Demographic Control Variables Definitions

Name	Definition	Source
Δ Employment	The year-over-year percent change in the number of employed persons. The data set used to observe employment, the QWI, is limited to employment by private firms and state and local governments. To adjust coefficient estimates, in our main regression results, this variable has been multiplied by a factor of 1,000.	QWI (2021)
Minority-Owned Bank Market Share	The deposit-weighted proportion of bank branches with greater than 50% ownership by a minority individual. *Minority* refers to any of the categories of ownership denoted as Black, Hispanic, Asian, and Other (Native American, Eskimo, Aleut, Arab, Multi-Racial).	Summary of Deposits FFIEC Call Reports
Δ Small Business Lending	The year-over-year percent change in total loan activity, as measured by the value of the outstanding loans.	FFIEC Call Reports
GFC	An indicator variable equal to one through 2007–2009 and zero otherwise (NBER Business Cycle Committee: December 2007-June 2009; Berger and Bouwman 2013: Q3 2007-Q4 2009). In a robustness check, we specify this variable as through 2008–2009.	NBER Business Cycle Committee (2022); Berger and Bouwman (2013)
COVID-19 Crisis	An indicator variable equal to one in 2020, and zero otherwise.	
Minority Population (%)	The proportion of residents identified as non-White.	Ruggles, Fitch, Goeken, Hacker, Nelson, Roberts, Schouweiler. and Sobek (2021); U.S. Census ACS (2022)
Working Age (25-64; %)	The proportion of residents between the ages of 25 and 64.	
Bachelor's Degree (%)	The proportion of residents age 25 years and older holding a bachelor's degree.	
Population Density	The number of residents per square kilometer.	
House Price Index (HPI)	The FHFA county-level, annual HPI. To adjust coefficient estimates, in our main regression results, this variable has been divided by a factor of 1,000.	FHFA (2022)
Median Household Income (Log)	The natural log of the family income.	U.S. Census ACS (2022)
Industrial Compositions (%)	The proportion of workers employed in the manufacturing (2-digit NAICS Code: 31-33), services (71, 72) and public administration (92) industries by 2-digit NAICS code.	QCEW (2022)
Minority Population (1990)	The proportion of residents identified as non-White in 1990.	Ruggles, Fitch, Goeken, Hacker, Nelson, Roberts, Schouweiler, andSobek (2021); U.S. Census Bureau (2022)
Finance (1990)	The proportion of workers identified as employed in the finance industry in 1990.	
Per Capita Income (1990)	The average individual income in 1990.	
Total Population (1990)	The total number of residents in 1990.	
Rurality (1990)	The proportion of land classified as rural in 1990.	
COVID-19 Death Rate	The per capita number of COVID-19 deaths.	Opportunity Insights (2021)

Panel B. Local Bank Health and Other Variables

Variable	Definition	Source
Deposits (per Capita)	The per capita value of bank deposits. To adjust coefficient estimates, in our main regression results, this variable has been divided by a factor of 1,000,000.	FDIC Summary of Deposits
Bank Assets (Log)	The natural logarithm of bank total assets.	FFIEC Call Reports
Capital Adequacy (%)	The mean equity ratio, defined as the ratio of total equity capital to total assets.	
Asset Quality (%)	The mean nonperforming loans to total loans ratio. Nonperforming loans are defined as loans, or leases past due more than 90 days or are no longer accruing interest.	
Management Quality (%)	The mean overhead costs ratio. The overhead costs ratio is defined as the ratio of premises and fixed assets expenses to total income.	
Earnings (%)	The mean return on assets. The return on assets ratio is defined as the ratio of total interest and non-interest income to total assets.	
Liquidity (%)	The mean ratio of liquid assets to total assets. Liquid assets included here are Currency and Coin, Money Market Mutual Funds, and Total Investment Securities.	
Sensitivity to Market Risk (%)	The mean ratio of the absolute difference (gap) between short-term assets and short-term liabilities to gross total assets.	
Bank Herfindahl–Hirschman Index (HHI)	The HHI, calculated using branch deposits.	FDIC Summary of Deposits
Deposits in Metropolitan Regions (%)	The proportion of deposits held by banks with the majority of their deposits in metropolitan areas.	
Bank Age	The number of years the bank has been operating. To adjust coefficient estimates, in our main regression results, this variable has been divided by a factor of 1,000.	FFIEC Call Reports
Bank Holding Company (BHC) Ownership (%)	The proportion of bank branches in a BHC.	FDIC Summary of Deposits
OCC Regulation (%)	The proportion of banks regulated by the OCC.	FFIEC Call Reports
FDIC Regulation (%)	The proportion of banks regulated by the FDIC.	
Federal Reserve Regulation (%)	The proportion of banks regulated by the Federal Reserve System.	
TARP Amount (per Capita)	The per capita value of TARP funding. To adjust coefficient estimates, in our main regression results, this variable has been divided by a factor of 1,000,000.	U.S. Treasury (2022)
PPP Loan Balance (per Capita)	The per capita value of originated PPP loans. To adjust coefficient estimates, in our main regression results, this variable has been divided by a factor of 1,000,000.	FFIEC Call Reports
Minority Ancestry	The proportion of residents with ancestry classified as a minority. We classify residents as having minority ancestry if their ancestry is African, Hispanic, Asian-Pacific, American Indian, or Arab, based on data from the U.S. Census ACS, which reports the first ancestry of people residing in a county.	U.S. Census ACS (2021)

Table 2: Summary Statistics for Minority-Owned Bank Presence and Employment

This table provides summary statistics for the variables used in our county-level analysis (county-year). The number of observations is 28,129. The time period is 2006–2020. Variables using dollar amounts are expressed in real 2020 dollars using the implicit GDP price deflator.

Variable:	**Full Sample Mean**	**Minority Bank Mean**	**Non-Minority Bank Mean**	**Diff: Minority–Non-Minority**	**Stdv.**	**p1**	**p25**	**p50**	**p75**	**p99**
Δ Overall Employment Growth	0.02	0.44	-0.01	0.45***	3.82	-10.58	-1.73	0.35	2.01	8.88
Δ Minority Employment Growth	2.41	1.58	2.47	-0.89***	7.59	-16.32	-1.04	2.58	5.62	22.67
Δ White Employment Growth	-0.19	0.13	-0.22	0.35***	3.64	-10.26	-1.84	0.06	1.68	8.38
Minority Bank Market Share	0.0043	0.0662	0.0000	-0.0662***	0.0386	0.0000	0.0000	0.0000	0.0000	0.1366
Minority Population (%)	22.33	47.45	20.61	26.84***	18.03	2.50	7.87	16.30	32.99	74.56
Working Age (25-64; %)	51.38	52.27	51.32	0.95***	3.27	41.57	49.74	51.64	53.36	59.11
Bachelor's Degree (%)	14.50	18.63	14.22	4.42***	6.32	5.85	10.00	12.93	17.43	35.54
Population Density	0.13	0.70	0.09	0.61***	0.56	0.00	0.01	0.03	0.07	1.53
Housing Price Index	293.49	459.03	282.12	176.90***	179.10	111.26	181.34	235.01	348.53	981.68
Median Household Income (Log)	10.98	11.05	10.97	0.08***	0.23	10.50	10.82	10.96	11.11	11.61
COVID-19 Death Rate	1.97	3.25	1.89	1.37***	9.72	0.00	0.00	0.00	0.00	47.42
Manufacturing (%)	16.12	9.58	16.57	-6.98***	12.14	0.00	6.80	13.41	22.69	52.15
Arts, Entertainment, and Recreation (%)	1.53	1.66	1.52	0.14***	1.82	0.00	0.60	1.12	1.83	9.58
Accommodation and Food Services (%)	9.97	10.16	9.96	0.20	5.53	0.00	7.49	9.63	12.10	29.36
Public Administration (%)	7.44	6.59	7.50	-0.91***	5.97	0.20	3.86	5.85	8.98	30.87
Bank Deposits ($100s per Capita)	1,029.35	3,993.39	825.75	3,167.64***	13,560.16	54.03	154.32	220.87	335.66	12,474.53
Bank Assets (Log)	27.56	30.00	27.39	2.61***	3.01	20.05	26.02	28.09	29.61	33.14
Capital Adequacy (%)	10.91	11.08	10.90	0.17***	1.30	8.04	10.09	10.88	11.65	14.55
Asset Quality (%)	1.50	1.62	1.49	0.14***	1.39	0.13	0.67	1.02	1.78	6.67
Management Quality (%)	0.96	0.97	0.96	0.01	0.25	0.62	0.79	0.89	1.07	1.63
Earnings (%)	0.85	0.88	0.85	0.03**	0.62	-1.57	0.71	0.98	1.19	1.81
Liquidity (%)	26.08	27.93	25.95	1.98***	7.27	12.43	21.32	25.35	29.70	49.31
Sensitivity to Market Risk (%)	15.02	13.94	15.10	-1.15***	7.87	3.71	9.06	12.68	19.88	36.94
HHI Deposits	0.16	0.12	0.16	-0.05***	0.14	0.01	0.07	0.12	0.21	0.67
Deposits in Metropolitan Regions (%)	69.01	87.52	67.74	19.78***	33.10	0.00	40.92	83.15	100.00	100.00
Bank Age	97.57	91.18	98.01	-6.83***	21.60	42.00	83.80	98.74	111.82	146.35
BHC Ownership (%)	75.29	59.07	76.40	-17.33***	22.67	7.09	61.37	79.14	95.46	100.00
OCC Regulation (%)	39.35	50.04	38.62	11.42***	26.66	0.00	18.47	37.21	57.86	100.00
FDIC Regulation (%)	42.93	32.26	43.66	-11.40***	26.62	0.00	21.82	41.52	61.60	100.00
Federal Reserve Regulation (%)	17.71	17.71	17.70	0.019	19.65	0.00	0.00	12.13	28.50	80.95
TARP Amount (per Capita)	2.25	2.83	2.21	0.62	69.53	0.00	0.00	0.00	0.00	0.00
PPP Loans ($1,000s per Capita)	65.50	62.25	112.74	-50.49***	321.49	0.00	0.00	0.00	0.00	1,781.96
Minority Ancestry	11.30	10.11	28.55	-18.43***	13.50	0.87	3.27	6.29	13.20	63.78

Table 3: Determinants of Minority-Owned Bank Presence

This table presents estimates from regressions analyzing the determinants of minority bank market share in a county using a county–year sample over the period 2006 to 2020. The dependent variable is the *Minority Bank Market Share*, the deposit-weighted proportion of branches of minority-owned banks (≥ 50% minority ownership) in a county. *Minority Ancestry (%)* is the proportion of residents with ancestors classified as a minority. We include a broad set of other local market (county) controls that could influence our dependent variable, including *Minority Population (%), Working Age (%), Bachelors' Degree (%), Population Density, HPI, Median Household Income (Log), COVID-19 Death Rate*, and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%)*, and *Public Administration (%).* All specifications include control variables lagged by one year, as well as state and year fixed effects. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Model	[1]	[2]	[3]	[4]
Dependent Variable:	Minority Bank Market Share (%)	Minority Bank Market Share (%)	Minority Bank Market Share (%)	Minority Bank Market Share (%)
Independent Variables:				
Minority Ancestry		102.0***		96.84***
		[2.63]		[2.72]
Minority	58.08***	8.39	55.26***	8.07
	[3.72]	[0.84]	[3.85]	[0.80]
County Controls:				
Working Age	-9.00	18.31	-12.39	14.34
	[-0.42]	[1.08]	[-0.61]	[0.89]
Bachelor's Degree	46.05**	65.05***	54.67**	73.80***
	[2.23]	[2.64]	[2.45]	[2.81]
Population Density	-2.82*	-4.41*	-3.02*	-4.39**
	[-1.65]	[-1.96]	[-1.76]	[-2.02]
Housing Price Index	-1.61	-6.19	-4.18	-8.35
	[-0.33]	[-1.18]	[-0.90]	[-1.61]
Median Household Income (Natural Log)	-24.28***	-33.18***	-28.21***	-37.53***
	[-2.74]	[-3.04]	[-3.05]	[-3.28]
COVID-19 Death Rate	0.042	0.041	0.043	0.043
	[0.98]	[0.99]	[0.98]	[1.01]
Manufacturing	0.84	-0.44	3.59	1.88
	[0.16]	[-0.08]	[0.72]	[0.36]
Arts, Entertainment, and Recreation	60.11*	64.61**	46.91	51.55*
	[1.87]	[2.03]	[1.60]	[1.77]
Accommodation and Food Services	20.53	20.06	18.93	18.05
	[1.61]	[1.60]	[1.40]	[1.37]
Public Administration	8.27	26.75	10.97	28.52
	[0.56]	[1.44]	[0.73]	[1.55]

Local Bank Controls:				
Deposits			-6.04	-8.33
			[-0.52]	[-0.69]
Assets (Log)			0.14	0.026
			[0.49]	[0.09]
Capital Adequacy			118.1*	120.5**
			[1.89]	[2.02]
Asset Quality			66.83	38.31
			[1.43]	[0.84]
Management Quality			762.1	858.0
			[0.95]	[1.11]
Earnings			-21.31	-69.99
			[-0.25]	[-0.76]
Liquidity			2.02	1.24
			[0.23]	[0.15]
Sensitivity to Market Risk			65.32**	53.92**
			[2.25]	[2.27]
HHI			-2.18	-3.59
			[-0.38]	[-0.64]
Deposits in Metropolitan Regions			10.29**	11.13***
			[2.56]	[2.74]
Bank Age			-0.12**	-0.074**
			[-2.38]	[-2.07]
BHC Ownership			-11.75**	-9.83**
			[-2.20]	[-2.15]
OCC Regulation			-13.12***	-13.06***
			[-2.59]	[-2.65]
FDIC Regulation			-1.11	-1.15
			[-0.29]	[-0.30]
TARP Amount (per Capita)			-1,251.8	1,132.0
			[-1.38]	[0.79]
PPP Loan Balance (per Capita)			-0.29	-0.60
			[-0.40]	[-0.82]
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	28,129	28,129	28,129	28,129
R^2	0.11	0.14	0.13	0.16

Table 4: Effect of Minority-Owned Banks on Employment Growth (Overall, Minority, and White)

This table reports regression estimates for analyzing the effects of minority bank market share on employment growth using OLS estimators for a county–year sample over the period 2006–2020. We show results using both full sample in models [1], [3], and [5] and a propensity-score matched sample in models [2], [4], and [6]. The PSM matched sample is limited to counties either containing minority-owned banks, or counties adjacent to counties containing minority-owned banks. Counties are matched on the 1990 minority population (%), proportion of workers in the finance industry (%), per capita income, total population as well as rurality (%). The PSM method limits observations to those on common support, without replacement. The dependent variables are *Δ Overall Employment*, *Δ Minority Employment*, and *Δ White Employment*, defined as the year-over-year percent change in the number of employed persons, Overall, Minority, and White, respectively. The key independent variables are *Minority Bank Market Share*, the deposit-weighted proportion of branches of minority-owned banks (≥ 50% minority ownership) in a county, as well as interactions between *Minority Bank Market Share* with *GFC* and *COVID-19 Crisis*. *GFC* is an indicator variable equal to one through 2007-2009 and zero otherwise. *COVID-19 Crisis* is an indicator variable equal to one in 2020, and zero otherwise. We include a broad set of other local market (county) control variables: *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density, HPI, Median Household Income (Log), COVID-19 Death Rate,* and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%),* and *Public Administration (%).* We also include a broad set of bank characteristics aggregated at the local market (county) level based on banks' proportions of deposits in each county: *Bank Deposits, Assets (Log), Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership (%), OCC Regulation (%), FDIC Regulation (%), TARP Amount (per Capita),* and *PPP Loan Balance (per Capita).* All specifications include county and bank control variables lagged by one year, as well as state and year fixed effects. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Model	[1]	[2]	[3]	[4]	[5]	[6]
Sample	Full Sample	PSM	Full Sample	PSM	Full Sample	PSM
Dependent Variable:	Δ Overall Employment	Δ Overall Employment	Δ Minority Employment	Δ Minority Employment	Δ White Employment	Δ White Employment
Independent Variables:						
Minority Bank Market Share	-1.50	-9.39	-14.21	-23.98***	3.99	-4.50
	[-0.25]	[-1.47]	[-1.46]	[-2.87]	[0.77]	[-0.72]
Minority Bank Market Share × GFC	39.57**	34.25*	111.9***	63.72**	35.22**	26.67
	[2.34]	[1.91]	[3.69]	[2.49]	[2.17]	[1.51]
Minority Bank Market Share × COVID-19 Crisis	10.96	54.20**	39.27**	79.21***	7.96	48.80**
	[0.68]	[2.56]	[2.21]	[3.16]	[0.48]	[2.28]
County Controls:						
Minority Population	-1.54	0.89	-43.40***	-21.17*	-3.87*	0.64
	[-0.71]	[0.10]	[-12.67]	[-1.91]	[-1.81]	[0.07]
Working Age	-14.97*	-9.15	-24.03*	5.21	-17.05**	-16.65
	[-1.88]	[-0.22]	[-1.67]	[0.11]	[-2.20]	[-0.41]
Bachelor's Degree	7.84	59.00**	-11.53	43.74	5.38	56.35**
	[1.01]	[2.10]	[-0.83]	[1.17]	[0.73]	[2.07]
Population Density	2.84***	2.91**	2.61***	2.39*	2.90***	3.24***
	[5.00]	[2.37]	[3.61]	[1.71]	[5.04]	[2.91]
Housing Price Index	-9.20***	-13.93*	-5.18	-17.71*	-9.61***	-16.30**
	[-4.10]	[-1.86]	[-1.45]	[-1.86]	[-4.39]	[-2.25]
Median Household Income (Log)	19.35***	5.75	16.59***	10.98	18.85***	6.32
	[7.64]	[0.65]	[3.78]	[0.98]	[7.62]	[0.73]
COVID-19 Death Rate	-0.019	-0.18**	-0.011	-0.18**	0.026	-0.18***
	[-0.61]	[-2.50]	[-0.23]	[-2.08]	[0.90]	[-2.74]
Manufacturing	-14.14***	-8.34	-26.01***	-24.35	-14.06***	-0.24
	[-4.73]	[-0.49]	[-3.91]	[-1.01]	[-4.98]	[-0.02]
Arts, Entertainment, and Recreation	-16.34	35.19	-2.11	20.14	-15.13	30.31
	[-1.18]	[0.59]	[-0.09]	[0.26]	[-1.10]	[0.53]
Accommodation and Food Services	-2.89	28.09	-23.76**	15.12	-1.87	32.01
	[-0.48]	[1.10]	[-2.24]	[0.47]	[-0.32]	[1.29]
Public Administration	-8.06*	-18.63	-15.08*	-16.60	-9.16**	-25.60
	[-1.78]	[-0.93]	[-1.71]	[-0.69]	[-2.06]	[-1.28]

Local Bank Controls:						
Bank Deposits	6.84	54.59	3.36	46.86	3.25	42.40
	[0.93]	[0.89]	[0.17]	[0.53]	[0.49]	[0.78]
Bank Assets (Log)	0.0090	-0.65	-0.22	0.26	-0.070	-0.92
	[0.06]	[-0.84]	[-0.76]	[0.27]	[-0.48]	[-1.23]
Capital Adequacy	-48.25**	12.64	-61.82	29.63	-47.34**	16.27
	[-1.97]	[0.18]	[-0.95]	[0.33]	[-2.05]	[0.23]
Asset Quality	-148.1***	47.69	-317.9***	32.85	-159.0***	32.73
	[-3.99]	[0.17]	[-4.62]	[0.08]	[-4.54]	[0.15]
Management Quality	631.1**	-612.1*	154.8	-718.1*	607.9**	-546.5
	[2.25]	[-1.77]	[0.33]	[-1.83]	[2.23]	[-1.54]
Earnings	292.7***	339.6	27.55	491.6	278.8***	221.5
	[4.06]	[1.28]	[0.18]	[1.11]	[4.09]	[0.94]
Liquidity	14.71***	2.44	16.88*	-1.23	15.04***	10.05
	[3.28]	[0.16]	[1.88]	[-0.06]	[3.47]	[0.69]
Sensitivity to Market Risk	-29.78***	-5.80	-33.28***	6.13	-26.96***	-3.34
	[-5.16]	[-0.26]	[-2.83]	[0.20]	[-4.84]	[-0.16]
HHI Deposits	-3.27	-22.76**	-4.37	-22.22**	-1.25	-19.91**
	[-1.17]	[-2.55]	[-0.83]	[-2.15]	[-0.46]	[-2.33]
Deposits in Metropolitan Regions	3.18***	8.12	3.96*	4.16	2.73***	9.81*
	[3.07]	[1.46]	[1.83]	[0.57]	[2.72]	[1.76]
Bank Age	-7.08	-1.18	-12.37	-49.94	-2.22	-5.33
	[-0.53]	[-0.02]	[-0.46]	[-0.59]	[-0.17]	[-0.09]
BHC Ownership	-4.47***	-9.47*	-10.24***	-10.53	-4.28***	-9.22**
	[-3.16]	[-1.95]	[-3.69]	[-1.55]	[-3.15]	[-1.99]
OCC Regulation	1.52	-1.75	3.64	-5.33	1.46	-2.52
	[0.86]	[-0.26]	[1.10]	[-0.58]	[0.85]	[-0.38]
FDIC Regulation	2.03	-6.54	5.04	-9.29	2.01	-7.91
	[1.17]	[-0.91]	[1.45]	[-1.04]	[1.19]	[-1.11]
TARP Amount (per Capita)	-793.2	3,090.7	1,658.6	1,766.9	-344.8	6,788.9
	[-0.50]	[0.30]	[1.03]	[0.14]	[-0.21]	[0.60]
PPP Loan Balance (per Capita)	-9.15***	-3.55	-10.19***	-3.57	-8.51***	-2.79
	[-9.94]	[-1.06]	[-6.53]	[-0.79]	[-9.65]	[-0.91]
PSM Match Sample	No	Yes	No	Yes	No	Yes
State & Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,129	1,756	28,129	1,756	28,129	1,756
R^2	0.26	0.46	0.17	0.34	0.24	0.43

Table 5: Effect of Minority-Owned Banks on Employment Growth (Alternative Samples Using PSM)

This table reports regression estimates for analyzing the effects of minority bank market share on employment growth using OLS estimators for a county–year sample over the period 2006 to 2020. We present results using a series of alternative samples. The "All Banks" sample includes banks of all sizes in the sample. The < \$10B sample excludes banks with more than \$10 billion in assets, and those that are publicly traded. The < \$2B sample excludes banks with more than \$2 billion in assets, and those that are publicly traded. We show results using a propensity-score matched sample in all models. The PSM matched sample is limited to counties either containing minority-owned banks, or counties adjacent to counties containing minority-owned banks. Counties are matched on the 1990 minority population (%), proportion of workers in the finance industry (%), per capita income, total population as well as rurality (%). The PSM method limits observations to those on common support, without replacement. The dependent variables are *Δ Overall Employment*, *Δ Minority Employment*, and *Δ White Employment*, defined as the year-over-year percent change in the number of employed persons, Overall, Minority, and White, respectively. The key independent variables are *Minority Bank Market Share*, the deposit-weighted proportion of branches of minority-owned banks (≥ 50% minority ownership) in a county, as well as interactions between *Minority Bank Market Share* with *GFC* and *COVID-19 Crisis*. *GFC* is an indicator variable equal to one through 2007-2009 and zero otherwise. *COVID-19 Crisis* is an indicator variable equal to one in 2020, and zero otherwise. We include a broad set of other local market (county) control variables: *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density, HPI, Median Household Income (Log), COVID-19 Death Rate,* and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%),* and *Public Administration (%).* We also include a broad set of bank characteristics aggregated at the local market (county) level based on banks' proportions of deposits in each county: *Bank Deposits (per Capita), Assets (Log), Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership (%), OCC Regulation (%), FDIC Regulation (%), TARP Amount (per Capita),* and *PPP Loans Balance (per Capita).* All specifications include county and bank control variables lagged by one year, as well as state and year fixed effects. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Model	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Sample	All Banks	< \$10 B	< \$2B	All Banks	< \$10 B	< \$2B	All Banks	< \$10 B	< \$2B
Dependent Variable:	Δ Overall Employment			Δ Minority Employment			Δ White Employment		
Independent Variables:									
Minority Bank Market Share	-9.39	-3.27	0.73	-23.98***	-11.48**	-3.39	-4.50	0.14	2.46
	[-1.47]	[-0.78]	[0.18]	[-2.87]	[-2.10]	[-0.60]	[-0.72]	[0.04]	[0.68]
Minority Bank Market Share × GFC	34.25*	24.31**	20.61**	63.72**	47.67***	39.15***	26.67	19.22	15.37
	[1.91]	[2.05]	[2.13]	[2.49]	[2.84]	[3.10]	[1.51]	[1.63]	[1.55]
Minority Bank Market Share × COVID-19 Crisis	54.20**	25.26*	19.81*	79.21***	36.71***	31.64***	48.80**	22.04*	16.22
	[2.56]	[1.96]	[1.78]	[3.16]	[2.67]	[2.70]	[2.28]	[1.70]	[1.44]
County & Local Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PSM Match Sample	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,756	1,685	1,411	1,756	1,685	1,411	1,756	1,685	1,411
R^2	0.46	0.45	0.51	0.34	0.32	0.35	0.43	0.42	0.47

Table 6: Effect of Minority-Owned Banks on Employment Growth – IV

This table reports regression estimates for analyzing the effects of minority bank market share on employment growth using IV models for a county–year sample over the period 2006 to 2020. The IV first stages are shown in models [1]-[3], while the second stages are shown in columns [4]-[6]. The IV is *Minority Ancestry (%)*, the proportion of residents with ancestors classified as a minority, or interactions of *Minority Ancestry (%)* with *GFC* and *COVID-19 Crisis*. The dependent variables in our main regressions are *Δ Overall Employment*, *Δ Minority Employment*, and *Δ White Employment*, defined as the year-over-year percent change in the number of employed persons, Overall, Minority, and White, respectively. The key independent variables are *Minority Bank Market Share*, the deposit-weighted proportion of branches of minority-owned banks (≥ 50% minority ownership) in a county, and interactions between *Minority Bank Market Share* with *GFC* and *COVID-19 Crisis*. *GFC* is an indicator variable equal to one through 2007–2009 and zero otherwise. *COVID-19 Crisis* is an indicator variable equal to one in 2020, and zero otherwise, We include a broad set of other local market (county) controls: *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density*, *HPI*, *Median Household Income (Log)*, *COVID-19 Death Rate*, and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%)*, and *Public Administration (%).* We also include a broad set of bank characteristics aggregated at the local market (county) level based on banks' proportions of deposits in each county: *Bank Deposits (per Capita), Assets (Log), Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership (%), OCC Regulation (%), FDIC Regulation (%), TARP Amount (per Capita),* and *PPP Loans Balance (per Capita).* All specifications include county and bank control variables lagged by one year, as well as state and year fixed effects. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Model	[1]	[2]	[3]	[4]	[5]	[6]
IV Stage	IV 1st Stage			IV 2nd Stage		
Dependent Variable:	Minority Bank Share	Minority Bank Share × GFC	Minority Bank Share × COVID-19 Crisis	Δ Overall Employment	Δ Minority Employment	Δ White Employment
Independent Variables:						
Minority Ancestry	0.10***	-0.00056	0.0018			
	[2.72]	[-0.24]	[1.01]			
Minority Ancestry × GFC	-0.036***	0.044***	-0.000070			
	[-2.60]	[2.79]	[-0.42]			
Minority Ancestry × COVID-19 Crisis	0.0015	0.00032	0.079***			
	[0.12]	[1.30]	[3.38]			
Minority Bank Market Share				0.24**	0.27**	0.25**
				[2.48]	[2.08]	[2.56]
Minority Bank Market Share × GFC				0.32*	1.17**	0.25
				[1.72]	[2.33]	[1.51]
Minority Bank Market Share × COVID-19 Crisis				-0.10	0.20	-0.16*
				[-1.11]	[1.44]	[-1.74]
County & Local Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,129	28,129	28,129	28,129	28,129	28,129
R^2	0.16	0.05	0.09	-0.06	-0.06	-0.06
F-Statistic	8.20***	14.79***	14.12***	19.29***	10.50***	17.39***

Table 7: Bank-Level Summary Statistics

This table provides summary statistics for the variables used in our bank-level analysis (bank-year) using Call Reports data. The number of observations is 58,443. Variables using dollar amounts are expressed in real 2020 dollars using the implicit GDP price deflator.

Variable:	**Full Sample Mean**	**Minority Bank Mean**	**Non-Minority Bank Mean**	**Diff: Minority–Non-Minority**	**Std. Dev.**	**p1**	**p25**	**p50**	**p75**	**p99**
Small Business Loan Activity Growth (Total)	11.12	28.91	10.71	18.20**	254.67	-59.39	-11.45	0.53	15.33	203.60
Bank Assets (Log)	19.37	19.30	19.37	-0.06*	1.25	17.17	18.56	19.20	19.95	23.71
Capital Adequacy (%)	10.52	11.03	10.51	0.52***	2.96	5.24	8.76	9.98	11.63	20.77
Asset Quality (%)	1.26	2.03	1.25	0.78***	1.94	0.00	0.23	0.64	1.49	9.48
Management Quality (%)	1.08	1.21	1.08	0.13***	0.42	0.47	0.81	1.01	1.29	2.28
Earnings (%)	0.74	0.41	0.75	0.34***	1.22	-3.97	0.49	0.88	1.25	2.82
Liquidity (%)	24.76	22.27	24.82	2.55***	13.95	1.12	14.72	22.64	32.69	65.12
Sensitivity to Market Risk (%)	18.94	22.69	18.86	3.84***	12.44	0.40	9.20	17.19	26.80	53.24
HHI Deposits	10.33	7.72	10.39	-2.67***	9.30	0.63	4.33	8.17	12.94	49.13
Deposits in Metropolitan Regions (%)	74.69	91.00	74.32	16.68***	43.48	0.00	0.00	100.00	100.00	100.00
Bank Age	66.97	34.45	67.73	-33.27***	45.17	2.00	20.00	74.00	106.00	152.00
BHC Ownership (%)	80.17	62.10	80.59	-18.49***	39.87	0.00	100.00	100.00	100.00	100.00
OCC Regulation (%)	21.09	25.34	20.99	4.35***	40.79	0.00	0.00	0.00	0.00	100.00
FDIC Regulation (%)	64.63	63.54	64.65	-1.11	47.81	0.00	0.00	100.00	100.00	100.00
TARP Amount ($1,000,000s)	2.46	4.57	2.42	2.15	102	0.00	0.00	0.00	0.00	0.00
Balance of PPP Loans ($1,000,000s)	6,897.83	5,628.01	6,927.22	-1,299.20	203,933.91	0.00	0.00	0.00	0.00	68,246.63
Minority Population (%)	26.92	60.03	26.15	33.88***	19.17	2.97	10.85	22.41	39.35	81.95
Working Age (25-64; %)	52.00	53.53	51.97	1.56***	2.98	42.50	50.49	52.35	53.81	59.05
Bachelor's Degree (%)	17.42	21.11	17.33	3.78***	6.39	6.83	12.63	16.61	21.03	36.87
Population Density	40.55	177.13	37.39	139.74***	165.26	0.39	2.97	8.39	28.65	511.22
Housing Price Index	390.06	644.43	384.17	260.26***	222.03	134.65	243.52	331.47	457.20	1,283.16
Median Household Income (Log)	11.05	11.05	11.05	0.00	0.20	10.57	10.92	11.04	11.18	11.58
COVID-19 Death Rate	1.58	3.51	1.54	1.97***	8.58	0.00	0.00	0.00	0.00	41.48
Manufacturing (%)	13.63	7.78	13.76	-5.99***	8.69	1.26	7.46	11.28	18.15	41.38
Arts, Entertainment, and Recreation (%)	1.58	1.74	1.58	0.17***	1.13	0.00	0.99	1.41	1.89	5.58
Accommodation and Food Services (%)	9.90	9.76	9.91	-0.15	3.43	0.00	8.19	9.48	11.17	22.87
Public Administration (%)	6.02	6.02	6.02	0.00	4.06	0.96	3.72	5.00	7.00	23.24

Table 8: Effect of Bank Minority-Ownership Status on Small Business Lending Growth (FFIEC Call Reports Data)

This table reports regression estimates for analyzing the effects of bank minority ownership status on small business lending growth using OLS models for a bank–year FFIEC Call Report sample over the period 2006 to 2020. We show results using models with different controls and fixed effects, where models [3] and [4] contain the most complete specifications. The dependent variable is *Δ Small Business Lending*, defined as the year-over-year percent change in the bank small business lending based on the FFIEC Call Reports. The key independent variables are *Minority Bank*, an indicator for minority-owned banks (≥ 50% minority ownership), and interactions between *Minority Bank* with *GFC* and *COVID-19 Crisis. GFC* is an indicator variable equal to one through 2007-2009 and zero otherwise. *COVID-19 Crisis* is an indicator variable equal to one in 2020, and zero otherwise. In Model [4] we provide further interactions of each of these terms with *High Minority Area*, an indicator variable equal to one if the bank branch network minority population exceeds the national average, and zero otherwise. We include a broad set of other local market (county) controls: *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density, HPI, Median Household Income (Log), COVID-19 Death Rate*, and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%),* and *Public Administration (%).* We also include a broad set of bank characteristic controls: *Assets (Log), Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership, OCC Regulation, FDIC Regulation, TARP Amount,* and *PPP Loans Balance.* Specifications include county and/or bank control variables lagged by one year as indicated, as well as year fixed effects. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at bank level are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Model	[1]	[2]	[3]	[4]
Dependent Variable:	Δ Small Business Lending	Δ Small Business Lending	Δ Small Business Lending	Δ Small Business Lending
Independent Variables:				
Minority Bank	-1.89	-7.96***	-7.07**	2.06
	[-1.05]	[-2.73]	[-2.41]	[0.48]
Minority Bank × GFC	12.50**	13.10**	13.73**	-6.90
	[2.14]	[2.28]	[2.40]	[-1.11]
Minority Bank × COVID-19 Crisis	193.1	199.8	130.6	48.69
	[1.53]	[1.60]	[1.05]	[1.10]
High Minority Area				5.30
				[1.27]
Minority Bank × High Minority Area				-9.46*
				[-1.77]
High Minority Area × GFC				-0.41
				[-0.25]
Minority Bank × High Minority Area × GFC				21.34**
				[2.42]
High Minority Area × COVID-19 Crisis				-21.67
				[-0.41]
Minority Bank × High Minority Area × COVID-19 Crisis				96.18
				[0.69]
Bank Controls	No	Yes	Yes	Yes
County Controls	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	58,443	58.443	58,443	58,443
R^2	0.010	0.032	0.040	0.040

Table 9: Effect of Bank Minority-Ownership Status on Small Business Origination Growth (Community Reinvestment Act (CRA) Data)

This table reports regression estimates for analyzing the effects of bank minority ownership status on small business lending growth using OLS models for a bank-county-year sample using the Community Reinvestment Act (CRA) data over the period 2006–2020. We show results using models for overall small business lending growth in models [1]-[2], as well as models with loans of different sizes in models [3]-[8]. The dependent variables are *Δ Overall Small Business Lending*, *Δ < $100K Small Business Lending*, *Δ $100-250K Small Business Lending*, and *Δ $250K-1M Small Business Lending*, defined as the year-over-year percent change in the new bank small business originations based on the CRA data. The key independent variables are *Minority Bank*, an indicator for minority-owned banks (≥ 50% minority ownership), and interactions between *Minority Bank* with *GFC* and *COVID-19 Crisis. GFC* is an indicator variable equal to one through 2007-2009 and zero otherwise. *COVID-19 Crisis* is an indicator variable equal to one in 2020, and zero otherwise. In Models [2], [4], [6] and [8], we provide further interactions of each of these terms with *High Minority Area*, an indicator variable equal to one if the bank branch network minority population exceeds the national average, and zero otherwise. We include a broad set of other local market (county) controls: *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density, HPI, Median Household Income (Natural Log), COVID-19 Death Rate*, and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%)*, and *Public Administration (%).* We also include a broad set of bank characteristics: *Assets (Log), Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership, OCC Regulation, FDIC Regulation, TARP Amount*, and *PPP Loans Balance.* Specifications include county and bank control variables lagged by one year as indicated, as well as county and year fixed effects. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Model	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Dependent Variable:	Δ Overall Small Business Origination	Δ Overall Small Business Origination	Δ < $100K Small Business Origination	Δ < $100K Small Business Origination	Δ $100-250K Small Business Origination	Δ $100-250K Small Business Origination	Δ $250K-1M Small Business Origination	Δ $250K-1M Small Business Origination
Independent Variables:								
Minority Bank	-4.52***	-3.52***	-5.26***	-4.45***	-0.50***	-0.44***	-0.17***	-0.16**
	[-8.52]	[-5.76]	[-10.32]	[-7.04]	[-9.44]	[-3.23]	[-4.73]	[-2.10]
Minority Bank × GFC	1.46**	0.078	1.61***	-0.074	0.17*	0.064	0.011	-0.18
	[2.19]	[0.09]	[3.72]	[-0.11]	[1.95]	[0.29]	[0.13]	[-0.99]
Minority Bank × COVID-19 Crisis	2.63***	0.16	4.80***	0.10	0.83**	-0.99***	-0.48***	-0.85***
	[3.77]	[0.12]	[7.66]	[0.08]	[2.52]	[-3.95]	[-6.55]	[-7.91]
High Minority Area		-1.36		-0.70		-0.052		-0.078**
		[-1.57]		[-1.04]		[-1.48]		[-2.27]
Minority Bank × High Minority Area		-1.25*		-1.01*		-0.054		-0.020
		[-1.96]		[-1.85]		[-0.38]		[-0.25]
High Minority Area × GFC		-1.39***		-0.83***		-0.10***		-0.086***
		[-4.20]		[-4.21]		[-3.77]		[-2.68]
Minority Bank × High Minority Area × GFC		2.23*		2.36***		0.16		0.27
		[1.88]		[2.69]		[0.67]		[1.28]
High Minority Area × COVID-19 Crisis		-1.03***		-1.12***		0.10***		0.012
		[-2.98]		[-4.37]		[2.61]		[0.40]
Minority Bank × High Minority Area × COVID-19 Crisis		3.13**		5.49***		1.86***		0.40***
		[2.25]		[3.88]		[4.39]		[2.98]
Bank & County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	621,449	621,449	537,501	537,501	236,012	236,012	242,076	242,076
R^2	0.003	0.003	0.004	0.004	0.027	0.027	0.016	0.016

Table 10: Effect of Bank Minority-Ownership Status on Household Lending Origination (Home Mortgage Disclosure Act (HMDA) Data)

This table reports regression estimates for analyzing the effects of minority bank market share on household (HH) lending origination in the mortgage market using OLS models for a bank–county-year sample from the Home Mortgage Disclosure Act (HMDA) data over the period 2006–2020. We show results using models for mortgage approvals, originations, and mortgage interest rate over 2006–2020 in models [1]-[4] and 2018-2020 in model [5], the latter focusing on the COVID-19 crisis only and noting that interest rates only start to be reported from 2018 onward. The dependent variables are *Approved*, an indicator that equals 1 if a loan application was approved by the lender (action_type = 1 or 2), and 0 if it was denied (action_type = 3), *Originated* is an indicator that equals 1 if a loan application was originated by the lender (action_type = 1), and 0 if it was denied (action_type = 3), and *Interest Rate* is the interest rate offered by the lender on approved mortgages. The key independent variables are *Minority Bank*, an indicator for minority-owned banks (≥ 50% minority ownership), *GFC*, an indicator variable equal to one through 2007–2009 and zero otherwise, *COVID-19 Crisis*, an indicator variable equal to one in 2020, and zero otherwise, and interactions between *Minority Bank* with *GFC* and *COVID-19 Crisis* and further interactions of each of these terms with *Minority HH*, an indicator variable equal to one if a household is minority. We include a set of standard HMDA borrower characteristics at loan application time are: *Female*, indicator for female applicants, *Metro*, indicator for metropolitan areas, *Ln(Loan Amount)*, and *Ln(Loan Amount) Sq*, the natural logarithm of the loan amount that the applicant requested and its squared term, *Co-Applicant*, indicator for the presence of a coapplicant on the application, *Ln(Applicant Income)*, the natural logarithm of the applicant income, and *Debt-to-Income*, the ratio of debt to income of the applicant. We include a broad set of other local market (county) controls: *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density, HPI, Median Household Income (Natural Log), COVID-19 Death Rate*, and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%)*, and *Public Administration (%)*. We also include a broad set of bank characteristics: *Assets (Log), Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership, OCC Regulation, FDIC Regulation, TARP Amount (Log)*, and *PPP Loans Balance (Log)*. Specifications include county and bank control variables lagged by one year as indicated, as well as state and year fixed effects. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Model	[1]	[2]	[3]	[4]	[5]
Dependent Variable:	Approved	Approved	Originated	Originated	Interest Rate
Independent Variables:					
Minority Bank	0.027**	0.038***	0.019	0.029**	0.131
	[2.27]	[3.26]	[1.39]	[2.16]	[1.55]
Minority Bank × GFC	0.086***	0.076***	0.115***	0.105***	
	[5.01]	[4.72]	[5.89]	[5.60]	
Minority Bank × COVID-19 Crisis	0.009	-0.020	0.019	-0.022	0.641***
	[0.51]	[-1.19]	[0.96]	[-1.01]	[9.47]
Minority HH	-0.036***	-0.033***	-0.037***	-0.033***	-0.156***
	[-7.36]	[-6.52]	[-7.21]	[-6.06]	[-13.15]
Minority HH × GFC		-0.053***		-0.079***	
		[-7.32]		[-7.01]	
Minority HH × COVID-19 Crisis		0.008***		0.006*	0.042***
		[2.74]		[1.68]	[3.95]
Minority Bank × Minority HH		-0.037*		-0.037*	0.020
		[-1.86]		[-1.66]	[0.36]
Minority Bank × Minority HH × GFC		0.031		0.032	
		[1.12]		[0.91]	
Minority Bank × Minority HH × COVID-19 Crisis		0.069**		0.091***	-0.216***
		[2.32]		[2.70]	[-3.14]
Female	0.005***	0.006***	0.006***	0.006***	-0.026***
	[4.15]	[4.23]	[4.04]	[4.14]	[-4.57]
Metro	0.032***	0.032***	0.037***	0.037***	-0.029*
	[7.07]	[7.10]	[7.17]	[7.21]	[-1.78]
Ln(Loan Amount)	0.066***	0.067***	0.040***	0.041***	0.081
	[7.07]	[7.10]	[4.10]	[4.14]	[0.71]
Ln(Loan Amount)^2	0.001	0.001	0.003***	0.003***	-0.049***
	[0.94]	[0.92]	[3.20]	[3.17]	[-5.16]
Co-Applicant	0.006***	0.006***	0.007***	0.007***	0.013***
	[3.79]	[3.82]	[4.11]	[4.15]	[3.15]
Ln(Applicant Income)	0.045***	0.045***	0.053***	0.053***	0.209***
	[13.57]	[13.67]	[15.36]	[15.48]	[7.56]
Debt-to-Income	-0.036***	-0.036***	-0.034***	-0.034***	0.001
	[-18.11]	[-18.29]	[-16.85]	[-17.06]	[0.12]
Bank & County Controls	Yes	Yes	Yes	Yes	Yes
State & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	3,034,722	3,034,722	2,776,079	2,776,079	765,827
R^2	0.10	0.10	0.12	0.12	0.35

Appendix S: Supplementary Robustness Tests and Analyses

Table S1: Effects of Minority-Owned Banks on Employment Growth – Robustness Checks (Overall, Minority, and White)

This table reports regression estimates for analyzing the effects of minority bank market share on employment growth using OLS models for a county–year sample over the period 2006–2020. We show results using several robustness checks. **Panel A** shows results using an alternative GFC definition; the GFC is defined as an indicator variable equal to one through 2008-2009 and zero otherwise. **Panel B** uses an alternative definition for minority-owned bank, a Minority Depository Institution (MDI) based on the FDIC (2021) definition. MDIs are defined according to two requirements: (1) the majority of the voting stock is owned by minorities or (2) the board of directors is comprised predominately of minorities and the community the bank serves is predominantly minority. **Panel C** shows results using an alternative specification for our main propensity score matching (PSM) technique, where we exclude White Women from the PSM control group. **Panel D** shows results using an alternative propensity score matching (PSM) technique. The PSM matched samples are limited to counties either containing minority-owned banks, or counties adjacent to counties containing minority-owned banks. Counties matched on the 1990 minority population (%), proportion of workers in the finance industry (%), per capita income, total population and rurality (%). Specification 1, used in our main results, uses one neighbor, without replacement on common support. Specification 2 uses three neighbors, with replacement.

The dependent variables are *Δ Overall Employment*, *Δ Minority Employment*, and *Δ White Employment*, defined as the year-over-year percent change in the number of employed persons, overall, minority, and white, respectively. The key independent variables are *Minority Bank Market Share*, the deposit-weighted proportion of branches of minority-owned banks (≥ 50% minority ownership) in a county, *GFC*, an indicator variable equal to one through 2007-2009 and zero otherwise, *COVID-19 Crisis*, an indicator variable equal to one in 2020, and zero otherwise, and interactions between *Minority Bank Market Share* with *GFC* and *COVID-19 Crisis*. We include a broad set of other local market (county): *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density, HPI, Median Household Income (Natural Log), Male (%), COVID-19 Death Rate* and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%),* and *Public Administration (%).* We also include a broad set of bank characteristics aggregated at the local market (county) level based on banks' proportions of deposits in each county: *Bank Deposits, Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership(%), OCC Regulation (%), FDIC Regulation (%), Total Loans to Assets (%), TARP Amount (per Capita),* and *PPP Loans Balance (per Capita).* Specifications include county and bank control variables lagged by one year, as well as state and year fixed effects, unless specified otherwise. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses unless specified otherwise. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Panel S1.A: Alternative GFC Definition

Model	[1]	[2]	[3]	[4]	[5]	[6]
Dependent Variable:	Δ Overall Employment	Δ Overall Employment	Δ Minority Employment	Δ Minority Employment	Δ White Employment	Δ White Employment
Independent Variables:						
Minority Bank Market Share	-0.00150	-0.00939	-0.0142	-0.0240***	0.00400	-0.00450
	[-0.25]	[-1.47]	[-1.46]	[-2.87]	[0.77]	[-0.72]
Minority Bank Market Share × GFC	0.0396**	0.0342*	0.112***	0.0637**	0.0352**	0.0267
	[2.34]	[1.91]	[3.69]	[2.49]	[2.17]	[1.51]
Minority Bank Market Share × COVID-19 Crisis	0.0110	0.0542**	0.0393**	0.0792***	0.00797	0.0488**
	[0.68]	[2.56]	[2.21]	[3.16]	[0.48]	[2.28]
PSM Match Sample	No	Yes	No	Yes	No	Yes
County & Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,129	1,756	28,129	1,756	28,129	1,756
R^2	0.26	0.46	0.17	0.34	0.24	0.43

Table S1.B: Alternative Minority Bank Definition: MDI Bank

Model	[1]	[2]	[3]	[4]	[5]	[6]
Dependent Variable:	Δ Overall Employment	Δ Overall Employment	Δ Minority Employment	Δ Minority Employment	Δ White Employment	Δ White Employment
Independent Variables:						
Minority Bank Market Share	-0.000829	-0.00834	-0.00975	-0.0167*	0.00396	-0.00535
	[-0.13]	[-1.19]	[-0.99]	[-1.84]	[0.71]	[-0.80]
Minority Bank Market Share × GFC	0.0517***	0.0440***	0.108***	0.0637***	0.0467***	0.0357**
	[4.21]	[3.22]	[6.78]	[2.79]	[3.60]	[2.42]
Minority Bank Market Share × COVID-19 Crisis	0.00540	0.0472**	0.0379**	0.0755***	-0.000987	0.0376*
	[0.34]	[2.14]	[2.21]	[2.96]	[-0.06]	[1.75]
PSM Match Sample	No	Yes	No	Yes	No	Yes
County & Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,129	1,756	28,129	1,756	28,129	1,756
R^2	0.26	0.46	0.17	0.34	0.24	0.43

Table S1.C: PSM Analysis: Excluding White Women in the Control Group

Model	[1]	[2]	[3]
Sample	PSM	PSM	PSM
Dependent Variable:	Δ Overall Employment	Δ Minority Employment	Δ White Employment
Independent Variables:			
Minority Bank Market Share	-0.00939	-0.0240***	-0.00450
	[-1.47]	[-2.87]	[-0.72]
Minority Bank Market Share × GFC	0.0342*	0.0637**	0.0267
	[1.91]	[2.49]	[1.51]
Minority Bank Market Share × COVID-19 Crisis	0.0542**	0.0792***	0.0488**
	[2.56]	[3.16]	[2.28]
Women Excluded in PSM Control	Yes	Yes	Yes
County & Bank Controls	Yes	Yes	Yes
Observations	1,756	1,756	1,756
R^2	0.46	0.34	0.43

Table S1.D*:* Alternative PSM Specifications

Model	[1]	[2]	[3]	[4]	[5]	[6]
Sample [PSM Type]	**PSM1**	**PSM2**	**PSM1**	**PSM2**	**PSM1**	**PSM2**
Dependent Variable:	Δ Overall Employment	Δ Overall Employment	Δ Minority Employment	Δ Minority Employment	Δ White Employment	Δ White Employment
Independent Variables:						
Minority Bank Market Share	-0.00939	-0.00894	-0.0240***	-0.0231***	-0.00450	-0.00413
	[-1.47]	[-1.42]	[-2.87]	[-2.82]	[-0.72]	[-0.67]
Minority Bank Market Share × GFC	0.0342*	0.0331*	0.0637**	0.0622**	0.0267	0.0261
	[1.91]	[1.86]	[2.49]	[2.46]	[1.51]	[1.49]
Minority Bank Market Share × COVID-19 Crisis	0.0542**	0.0514**	0.0792***	0.0762***	0.0488**	0.0460**
	[2.56]	[2.47]	[3.16]	[3.08]	[2.28]	[2.18]
County & Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,756	1,808	1,756	1,808	1,756	1,808
R^2	0.46	0.46	0.34	0.34	0.43	0.43

Table S2: Effects of Minority-Owned Banks on Employment Growth – Conditioning on Racial Animosity Variables (Overall, Minority, and White)

These tables report regression estimates for analyzing the effects of minority bank market share on employment growth using OLS models for a county–year sample over the period 2006–2020. We show results for the full sample when conditioning on racial animosity variables: *Fair Housing Law, Interracial Marriage, Racial Bias Index, Slave State, Racial Animosity, Black Lives Matter (BLM) Indicator*. **Panel A** shows definitions for the additional animosity variables, while **Panels B-D** reports results for the overall, minority, and White employment growth, respectively when conditioning on these additional animosity variables.

The dependent variables are *Δ Overall Employment*, *Δ Minority Employment*, and *Δ White Employment*, defined as the year-over-year percent change in the number of employed persons, overall, minority, and White, respectively. The key independent variables are *Minority Bank Market Share*, the deposit-weighted proportion of branches of minority-owned banks (≥ 50% minority ownership) in a county, *GFC*, an indicator variable equal to one through 2007–2009 and zero otherwise, *COVID-19 Crisis*, an indicator variable equal to one in 2020, and zero otherwise, and interactions between *Minority Bank Market Share* with *GFC* and *COVID-19 Crisis*. We include a broad set of other local market (county): *Minority Population (%), Working Age (%), Bachelor's Degree (%), Population Density, HPI, Median Household Income (Natural Log), COVID-19 Death Rate,* and several variables for important industries in the county such as *Manufacturing (%), Arts, Entertainment, and Recreation (%), Accommodation and Food Services (%),* and *Public Administration (%).* We also include a broad set of bank characteristics aggregated at the local market (county) level based on banks' proportions of deposits in each county: *Bank Deposits, Capital Adequacy (%), Asset Quality (%), Management Quality (%), Earnings (%), Liquidity (%), Sensitivity to Market Risk (%), Bank HHI, Deposits in Metropolitan Regions (%), Bank Age, BHC Ownership (%), OCC Regulation (%), FDIC Regulation (%), TARP Amount (per Capita),* and *PPP Loans Balance (per Capita).* Specifications include county and bank control variables lagged by one year, as well as state and year fixed effects, unless specified otherwise. All variables are defined in Table 1. Heteroskedasticity-robust *t*-statistics clustered at county level are reported in parentheses unless specified otherwise. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Panel S2.A: Definitions for Additional Racial Animosity Variables

Variable	Definition	Source
Fair Housing Law	Equal to one if the state did not curb discriminatory practices in housing until the Fair Housing Act of 1968, and zero otherwise.	Célerier and Matray (2019); Collins (2004)
Interracial Marriage	Equal to one if interracial marriage was banned in the state in 1967, and zero otherwise.	Célerier and Matray (2019); Fryer (2007)
Racial Bias Index	Equal to one if the state is above the median for interracial marriage bias, and zero otherwise.	Célerier and Matray (2019); Levine, Rubinstein, and Levkov (2014)
Slave State	Equal to one if slavery was legal in the state at the beginning of Civil War (1861), and zero otherwise.	Célerier and Matray (2019)
Racial Animosity Index	We use principal component analysis to construct an index of the above four racial animosity variables.	
Black Lives Matter (BLM) Protests	An indicator variable equal to one if the county experienced a Black Lives Matter (BLM) protest between May 29 and June 9 2020.	Social Explorer (2020)

Table S2.B: Effects on Overall Employment Growth, Conditioning on Racial Animosity

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Dependent Variable:	Δ Overall Employment	Δ Overall Employment	Δ Overall Employment	Δ Overall Employment	Δ Overall Employment	Δ Overall Employment	Δ Overall Employment
Independent Variables:							
Minority Bank Market Share	-0.00656	-0.00509	-0.00312	-0.00884	-0.000834	-0.00312	-0.00618
	[-1.12]	[-0.84]	[-0.51]	[-1.51]	[-0.15]	[-0.51]	[-1.04]
Minority Bank Market Share × GFC	0.0389**	0.0388**	0.0393**	0.0385**	0.0395**	0.0393**	0.0391**
	[2.36]	[2.35]	[2.33]	[2.35]	[2.37]	[2.33]	[2.38]
Minority Bank Market Share × COVID-19 Crisis	0.0123	0.0118	0.0106	0.0124	0.0108	0.0106	0.0119
	[0.77]	[0.74]	[0.67]	[0.77]	[0.67]	[0.67]	[0.75]
Fair Housing Law		0.00214***					
		[3.83]					
Interracial Marriage			0.00469***				
			[6.81]				
Racial Bias Index				0.00360***			
				[7.12]			
Slave State					0.00437***		
					[6.43]		
Racial Animosity						0.00234***	
						[6.81]	
BLM Indicator							-0.00158***
							[-2.80]
County & Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,129	28,129	28,129	28,129	28,129	28,129	28,129
R^2	0.24	0.24	0.25	0.25	0.25	0.25	0.24

Table S2.C: Effects on Minority Employment Growth, Conditioning on Racial Animosity

Model	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Dependent Variable:	Δ Minority Employment	Δ Minority Employment	Δ Minority Employment	Δ Minority Employment	Δ Minority Employment	Δ Minority Employment	Δ Minority Employment
Independent Variables:							
Minority Bank Market Share	-0.000450	-0.00412	-0.00445	-0.00357	-0.00692	-0.00445	-0.000460
	[-0.04]	[-0.36]	[-0.39]	[-0.29]	[-0.56]	[-0.39]	[-0.04]
Minority Bank Market Share × GFC	0.111***	0.111***	0.110***	0.110***	0.110***	0.110***	0.111***
	[3.52]	[3.54]	[3.56]	[3.52]	[3.53]	[3.56]	[3.52]
Minority Bank Market Share × COVID-19 Crisis	0.0389**	0.0403**	0.0409**	0.0389**	0.0406**	0.0409**	0.0389**
	[2.26]	[2.34]	[2.39]	[2.25]	[2.38]	[2.39]	[2.26]
Fair Housing Law		-0.00534***					
		[-4.60]					
Interracial Marriage			-0.00546***				
			[-4.17]				
Racial Bias Index				0.00493***			
				[4.81]			
Slave State					-0.00494***		
					[-3.87]		
Racial Animosity						-0.00273***	
						[-4.17]	
BLM Indicator							0.0000408
							[0.04]
County & Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,129	28,129	28,129	28,129	28,129	28,129	28,129
R^2	0.16	0.16	0.16	0.16	0.16	0.16	0.16

Table S2.D: Effects on White Employment Growth, Conditioning on Racial Animosity

Model	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Dependent Variable:	Δ White Employment	Δ White Employment	Δ White Employment	Δ White Employment	Δ White Employment	Δ White Employment	Δ White Employment
Independent Variables:							
Minority Bank Market Share	-0.00177	-0.000149	0.00181	-0.00396	0.00424	0.00181	-0.00134
	[-0.34]	[-0.03]	[0.33]	[-0.76]	[0.83]	[0.33]	[-0.26]
Minority Bank Market Share × GFC	0.0342**	0.0341**	0.0346**	0.0338**	0.0348**	0.0346**	0.0345**
	[2.15]	[2.13]	[2.13]	[2.14]	[2.17]	[2.13]	[2.16]
Minority Bank Market Share × COVID-19 Crisis	0.00919	0.00858	0.00744	0.00923	0.00756	0.00744	0.00866
	[0.57]	[0.53]	[0.46]	[0.57]	[0.46]	[0.46]	[0.54]
Fair Housing Law		0.00237***					
		[4.34]					
Interracial Marriage			0.00489***				
			[7.28]				
Racial Bias Index				0.00345***			
				[6.97]			
Slave State					0.00459***		
					[6.91]		
Racial Animosity						0.00244***	
						[7.28]	
BLM Indicator							-0.00180***
							[-3.31]
County & Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,129	28,129	28,129	28,129	28,129	28,129	28,129
R^2	0.23	0.23	0.23	0.23	0.23	0.23	0.23

Figure S1: Propensity Score Matching (PSM) Diagnostics

This figure shows standardized % bias across key covariates of treatment-group observations versus control-group observations after the propensity score matching method was employed.