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*Lending in the Dark:
Local Newspaper Closures and
Discrimination in Mortgage Lending*

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Lending in the Dark: Local Newspaper Closures and Discrimination in Mortgage Lending*

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Abstract

This paper examines the extent to which local newspaper closures affect discrimination against minority borrowers in mortgage lending. I find that following a newspaper closure, interest rate differentials between minority (black or Hispanic) and comparable non-minority borrowers increase by 5.5 basis points, widening the existing gap in mortgage outcomes between the two groups. This effect cannot be explained by differences in credit risk or underlying economic conditions. My findings suggest that the local press plays an important role in monitoring lending practices and reducing information asymmetries in the mortgage market.

JEL classification: G21, J15, R31

Keywords: lending, discrimination, minority, GSE mortgages, local newspapers

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“Were it left to me to decide if we should have a government without newspapers, or newspapers without a government, I should not hesitate a moment to prefer the latter.”

– Thomas Jefferson, 3rd U.S. President

1 Introduction

Famously described as the first draft of history, local newspapers serve as an authoritative source of information for communities, providing in-depth coverage of local economic activities and financial markets. There is substantial evidence that the print media have a significant impact on the efficiency and liquidity of stock and bond markets (Tetlock et al. 2008; Fang and Peress 2009; Peress 2014; Gao et al. 2020a). However, its impact on the mortgage market remains unexplored. In this paper, I examine how a negative shock to local media coverage - in particular, the closure of a local newspaper - affects persistent racial and ethnic disparities in US mortgage lending.

Using a difference-in-differences methodology that exploits the staggered closure of US local newspapers between 2018 and 2021, I find a significant increase in discriminatory lending practices following a local newspaper closure. Specifically, the mortgage rate gap between minority (black or Hispanic) and comparable non-minority borrowers increases by about 5.5 basis points (bps) on average in the three years following a newspaper closure. This widening gap in mortgage rates suggests that minority borrowers face higher lending rates when local media scrutiny is reduced. A rich set of borrower and loan controls (e.g. credit score, income, LTV ratio, loan amount, ...) provides evidence that this effect is not due to differences in borrower creditworthiness or loan structure.

There are two main channels through which newspaper closures could affect discrimination against minority borrowers. First, a fundamental responsibility of the news media, known as the watchdog role, is to monitor local political, economic and social issues (Dyck et al. 2008; Snyder and Strömberg 2010; Bennett and Serrin 2005). Since the early twentieth century, local newspapers in the US have reported on racial segregation and bank redlining in their neighbourhoods, where minority borrowers were denied access to mortgages or subjected to unfavourable terms through subprime loan contracts (Rothstein 2017; Carroll 2017). Early newspaper reports of such discriminatory lending practices were the main force driving academic research into the issue (Black 2023).¹ As evidence of racial and ethnic disparities in mortgage

¹The seminal studies by Black et al. (1978) and Munnell et al. (1996) were among the first to use statistical techniques and models to examine lending discrimination on the basis of race.

outcomes became more concrete and widespread in the news and in academic studies, several anti-discrimination laws and regulations were enacted, notably the Fair Housing Act (FHA) of 1968, the Equal Credit Opportunity Act (ECOA) of 1974, the Home Mortgage Disclosure Act (HMDA) of 1975, and the Community Reinvestment Act (CRA) of 1977. Along with bank examiners and consumer protection agencies, local newspapers help monitor lenders to make sure they comply with the law.

The second channel relates to the information intermediation role of the news media (Bushman et al. 2017; Peress 2014; Gao et al. 2020a). Through comprehensive coverage and timely dissemination of local economic trends, housing market dynamics, and regulatory developments, local newspapers provide valuable insights to both borrowers and lenders, thereby reducing information asymmetries and facilitating transparency in the mortgage market. For example, with accurate information about mortgage products, interest rates, and lending policies, borrowers can make informed decisions and negotiate favourable terms. Most relevant to our context, by documenting and reporting incidents of lending discrimination, local newspapers help raise awareness among minority borrowers about predatory lending and discriminatory practices by certain lenders. As a result, local information vacuums created by newspaper closures can lead to costly borrowing decisions by minority borrowers, thereby exacerbating racial and ethnic disparities in mortgage outcomes.

Taken together, these two channels suggest a plausible hypothesis that local newspaper closures have a negative impact on mortgage discrimination against minorities. This hypothesis is further supported by the fact that alternative news sources, such as national news outlets and online media platforms, have not adequately filled the information vacuum created by local newspaper closures. On the one hand, while national news outlets are adept at covering important national and international stories with broad appeal, they cannot replace the nuanced and community-specific coverage provided by local journalism (Waldman 2011). On the other hand, online media platforms focus primarily on disseminating information rather than producing original content (Cagé et al. 2020). Moreover, research shows that nearly three quarters of Americans (72%) follow local news closely (Miller et al. 2012). Importantly, minorities in the US, especially the low-skilled, are even more reliant on local and traditional news providers than whites and the high-skilled, who prefer national and international news and have been quick to embrace online and social media (Bang et al. 2023; Barthel et al. 2019). Ultimately, it remains an

empirical question whether and to what extent the closure of local newspapers affects mortgage outcomes for minority borrowers.

To address concerns that underlying economic conditions may drive both the closure of local newspapers and the increase in discriminatory lending practices, I provide three different identification strategies. First, I conduct two cross-sectional tests to assess whether different levels of (i) local press scrutiny and (ii) news exposure influence the effect of newspaper closures on mortgage discrimination. If underlying economic conditions are likely to drive my results, the level of mortgage discrimination should be independent of these two factors. In the first test, I compare counties with few newspapers to counties with many newspapers, expecting the closure effect to be weaker in the latter because alternative newspapers can act as substitutes. The results show that the closure effect is stronger in counties with fewer newspapers. In the second test, I examine first-time versus repeat homebuyers, expecting that first-time homebuyers, who rely more on external information and are easier targets for discrimination, will be more affected. Consistent with this expectation, I find that the increase in price discrimination following a newspaper closure is greater for loans to minority first-time homebuyers compared to minority repeat homebuyers.

The second identification strategy is a falsification test in which I randomise the year of each closure event. If unobserved economic conditions drive my results rather than the newspaper closures themselves, I should obtain similar results using the 'pseudo' closure events. The fact that the effect of newspaper closures on mortgage discrimination is no longer significant in this test rejects such a hypothesis.

As a third identification strategy, I examine the differential effect of newspaper closures on mortgage discrimination between closure counties (i.e., counties that experience a local newspaper closure) and their matched neighbouring counties without newspaper closures. Specifically, for each closure county, I use propensity score matching to find a non-closure county in the same state with its own newspaper operation that has similar economic and demographic characteristics. If declining economic conditions in the region drive the observed increase in price discrimination, the closure effect should be insignificant using the matched sample. However, my results indicate that the differential effect of newspaper closures on price discrimination in the closure counties compared to the matched control counties is statistically significant at about 2.5 bps. The smaller closure effect in the matched sample compared to the baseline effect is likely because the

matching reduces the influence of unobserved regional differences and better isolates the direct effect of newspaper closures on lending discrimination.

To shed light on the heterogeneity of the closure effect, I also conduct several additional analyses to examine the extent to which the effect differs across lenders, loan types, and minority groups. With respect to lenders, I find that traditional banks increase interest rates for minority borrowers relative to non-minority borrowers following newspaper closures, while non-bank and FinTech lenders show no significant response. This is likely due to the relationship between traditional banks and local journalism, where banks are subject to greater scrutiny and accountability, which diminishes following a newspaper closure. The analysis also highlights a consistent pre-closure minority premium across all lender types, with FinTech lenders offering the lowest premium, likely due to their use of technology-based lending models that may reduce human bias. In terms of different loan types, the effect of newspaper closures is stronger for purchase mortgages than for refinance mortgages, reflecting the higher perceived risk of purchase loans and the limited experience and bargaining power of purchase borrowers, making them more susceptible to lender discretion in pricing. Finally, looking at specific minority groups, I find that black borrowers face a larger pre-closure interest rate gap than Hispanic borrowers. However, both groups experience a similar increase in post-close interest rates, suggesting that they are equally vulnerable to discriminatory pricing when local media oversight is reduced.

My research is important for two reasons. First, it provides the first evidence showing that the local press is an effective watchdog and an important information intermediary for the local mortgage markets. While previous research has shown how the media can mislead borrowers by increasing their exposure to deceptive advertising and expensive mortgages from certain lenders (Gurun et al. 2016), my research suggests the other side of the media's influence by focusing on the positive role of local newspapers in monitoring and reducing information asymmetries in mortgage markets. It should be noted, however, that my finding of a 5.5 basis point increase in the mortgage rate gap following a newspaper closure (or a 2.5 basis point increase using the matched sample) is likely to represent only the lower bound of the effect. My study focuses on conforming mortgages, which typically involve more standardised underwriting and greater regulatory scrutiny. In less regulated segments, such as the subprime or non-conforming mortgage markets, where lender discretion is greater and oversight is weaker (Dell'Ariccia et al. 2012; Keys et al. 2012), the impact of reduced local news coverage could be even more pronounced, leading

to greater disparities in mortgage pricing.

Second, my study provides new evidence on the mortgage rate gap between minority and non-minority borrowers. Despite legislative efforts to address discriminatory lending practices in the US mortgage market, significant disparities in loan approval rates, interest rates, and overall mortgage outcomes persist, reinforcing systemic barriers to homeownership and wealth accumulation for minority borrowers. I find that a minority borrower applying for a purchase loan is 5 percentage points (pps) more likely to be denied than an otherwise equivalent non-minority borrower. For refinance loans, the difference is larger at about 8 pps. In terms of price discrimination, a minority borrower pays about 4.5 bps and 2.7 bps more than a comparable non-minority borrower for GSE purchase and refinance loans, respectively. These disparities are shown to increase substantially after a newspaper closure event, especially for purchase loans (by almost 120%).

My study relates to three strands of literature. First, it adds to the large literature on the impact of the media on the financial markets (Ahern and Sosyura 2014; Dougal et al. 2012; Gurun and Butler 2012; Hillert et al. 2014; Reuter and Zitzewitz 2006; Solomon 2012; Seamans and Zhu 2014). While the role of the media in financial markets has been extensively studied in the context of stock and bond markets, where news coverage influences investor behaviour, corporate governance and market efficiency (Dyck et al. 2008; Engelberg and Parsons 2011; Fang et al. 2014; Solomon et al. 2014), its impact on the mortgage market remains largely unexplored. My study addresses this gap by investigating the influence of the media in the mortgage market, specifically how news coverage shapes mortgage lending practices.

A closer set of papers examines the economic and social consequences of the decline of local newspapers in the US. In particular, the steady decline of local newspapers in the US since the late 2010s has raised serious concerns about its impact on several community issues that depend on the accountability reporting of local journalism, such as political engagement, government accountability, corruption, and crime (Lipka and Shearer 2023; Waldman 2011). Previous studies show that local newspaper closures lead to increased local corporate malfeasance (Heese et al. 2022; Jiang and Kong 2023), lower government efficiency and higher public financing costs (Gao et al. 2020b). My work extends this literature by showing that the decline of local newspapers also has a negative impact on the mortgage market, in particular by exacerbating racial and ethnic disparities in lending. As local journalism weakens, lenders face less oversight, leading to

an increase in discriminatory lending that adversely affects minority borrowers. This suggests that, in addition to holding local governments accountable, local newspapers play a crucial role in ensuring fairness and transparency in local mortgage markets.

Another strand of research focuses on the issue of discrimination in mortgage lending. There is substantial evidence that racial and ethnic discrimination continues to plague US mortgage markets, with significant lending disparities observed between minority and non-minority borrowers (Begley and Purnanandam 2021; Bayer et al. 2018; Hanson et al. 2016; Cheng et al. 2015)). Recently, Bartlett et al. (2022) provide a thorough analysis of US conforming mortgage loans and find significant interest rate differentials between seemingly similar borrowers who differ only in race or ethnicity. The authors show that these differences persist even after controlling for upfront loan costs (e.g., discount points and fees), as suggested by Bhutta and Hizmo (2021), who argue that the higher interest rates received by black and Hispanic borrowers may be offset by lower upfront costs. My study adds to this literature by incorporating these new standards into the analysis of mortgage pricing to provide a robust and credible evidence of lending discrimination for a more recent period, 2018–2021.

The remainder of the paper is structured as follows. Section 2 provides the institutional background and motivations for the hypothesis tested in the paper. Section 3 describes the data. Section 4 presents the empirical strategy and the main results. Section 5 examines the heterogeneity of the effect across lenders, loan types and minority groups. Section 6 presents robustness checks of the main results. Section 7 examines the effect of newspaper closures on loan denial rates. Section 8 concludes.

2 Background

For decades, combating lending discrimination against minorities has been a major concern of the US government and lawmakers. Efforts to eradicate such discrimination date back to the passage of the Civil Rights Act of 1866, which not only abolished slavery but also prohibited practices that relegated African Americans to second-class citizenship (Rothstein 2017). However, it was not until the Fair Housing Act of 1968 that discrimination in housing, including mortgage lending, on the basis of race was prohibited at the local, state and federal levels. Following the FHA, the Equal Credit Opportunity Act (ECOA) of 1974 extended anti-discrimination protections to lending practices beyond housing. These laws ensure that lending decisions are based solely

on an applicant's creditworthiness and not on protected personal characteristics such as race, religion, national origin, sex, marital status or age.

To ensure compliance, US fair lending laws also mandate transparency in the lending process by requiring lenders to disclose key details about loan approvals, interest rates, and denials. The Home Mortgage Disclosure Act (HMDA) of 1975 requires financial institutions to collect and publicly report data on mortgage applications, including the race and ethnicity of applicants. The HMDA's transparency requirements have proven critical to the enforcement of both the FHA and ECOA, as they allow regulators and the public to identify potential patterns of discrimination in lending (Munnell et al. 1996; Black et al. 1978). These regulations are enforced by agencies such as the Consumer Financial Protection Bureau (CFPB), the Federal Trade Commission (FTC), and the Department of Housing and Urban Development (HUD), which investigate and penalise lenders who violate fair lending standards.

A closer look at the origins and development of the legal framework for anti-discrimination in lending practices reveals the crucial role played by local newspapers. Through their reporting on local business activities, economic conditions, and civic engagement, local newspapers help raise public awareness about discriminatory lending practices in their communities. In particular, early evidence of lending discrimination against minorities was first documented in newspapers rather than academic journals. As early as the first half of the twentieth century, local newspapers in Seattle - namely the *Washington New Dealer* and the *New World* - had reported on the case of racially restrictive housing covenants in the area, which were agreements between property owners not to sell or rent to certain racial or ethnic groups.² In 1988, local newspapers in Atlanta and Detroit made national headlines when they analysed Home Mortgage Disclosure Act (HMDA) data and found that predominantly white neighbourhoods received three to four times more home purchase loans per housing unit than predominantly minority areas.³ Similarly, there is evidence that many other local newspapers, such as *The Chicago Defender*, *The Philadelphia Inquirer*, *The Baltimore Sun*, etc., have been reporting on lending discrimination against minorities since the twentieth century.⁴

Local newspapers also support the work of government and civil rights agencies charged

²See more at the Racial Restrictive Covenants Project of the University of Washington and Eastern Washington University, www.depts.washington.edu/covenants/segregation.

³See "The Color of Money", *Atlanta Journal-Constitution*, May 1-16, 1988, and "The Race for Money", *Detroit Free Press*, June 24-27, 1988.

⁴Information obtained from NewsBank, see www.newsbank.com. See also Appendix A for historical evidence of local newspapers reporting on minority lending discrimination.

with protecting consumers by providing timely information about local housing markets. For example, the *Atlanta Journal-Constitution's* 1988 series "The Color of Money" served as the basis for a U.S. Department of Justice lawsuit against Decatur Federal Savings and Loan Association for discriminating against mortgage applicants on the basis of race. In 2012, a significant number of mortgage-related advertisements in newspapers helped inform the CFPB and the FTC of deceptive advertising practices by several mortgage lenders and mortgage brokers.⁵ In another case, a series of investigative reports by the Miami Herald – a prominent newspaper serving the Miami metropolitan area – on significant disparities in lending outcomes between white and minority borrowers in Miami-Dade County in 2017 also drew the attention of the National Fair Housing Alliance (NFHA), which later launched an investigation into potential violations of fair lending laws by mortgage lenders operating in the region.⁶

However, the recent wave of local newspaper closures in the United States raises serious concerns about the potential erosion of their vital watchdog role. According to a 2020 report by the University of North Carolina's Center for Innovation and Sustainability in Local Media, more than 2,100 newspapers have closed since 2004, creating what are often referred to as "news deserts" (Abernathy 2020).⁷ At the same time, newsroom employment at newspaper publishers fell by 57% between 2008 and 2020, from roughly 71,000 jobs to about 31,000 (Walker 2021). The decline of local news outlets and the resulting vacuum of investigative reporting could therefore increase discriminatory lending practices, as lenders can operate with less scrutiny while borrowers receive less information about the lending environment and regulations.

It should be noted that, the rapid decline of local newspapers is largely due to the significant loss of advertising revenue to online media (Abernathy 2020). This shift in advertising revenue is driven by the lower publishing costs and wider reach of digital platforms, which attract advertisers seeking to maximise their returns.⁸ As a result, local newspaper publishers face a difficult dilemma: while there is still a demand for news, they cannot easily make up for lost advertising revenue by raising prices or subscription fees, as higher costs could drive away customers and further erode their readership. To this end, it is also crucial to examine the unintended consequences of digitalisation in the media industry, in particular the loss of local

⁵See www.consumerfinance.gov/about-us/newsroom.

⁶See <https://www.miamiherald.com/news/business/real-estate-news>.

⁷News deserts are communities that lack adequate local news coverage, leading to a reduction in the dissemination of vital information and an overall decline in community engagement.

⁸By free-riding on existing stories created by traditional newspapers, many news websites have low to almost free publishing costs (Waldman 2011).

newspapers.

3 Data

3.1 Mortgage data

In this paper, I focus on loans securitised by Fannie Mae – a government-sponsored enterprise (GSE), because this mortgage market provides an ideal setting to determine whether the observed interest rate differentials reflect discrimination rather than differences in credit risk. In particular, one of the key features of GSE loans is that lenders must pay a fee to the GSEs (Fannie Mae or Freddie Mac) to be guaranteed against credit risk (e.g., default). This fee – called the Loan-Level Pricing Adjustment (LLPA) – is determined by taking into account a number of risk factors, the most important of which are loan-to-value (LTV) ratio and credit score. As a result, any interest rate differential between GSE loans with the same level of credit risk may reflect discrimination (Bartlett et al. 2022).

I obtain loan-level mortgage data from Fannie Mae’s single-family loan performance data. This dataset covers a large subset of conforming mortgages originated in the United States and provides detailed information on loan, property, and borrower characteristics, including interest rate, loan amount, loan purpose, property zip code, and all key underwriting variables such as borrower credit score, income, LTV ratio, and DTI ratio. The dataset also provides important information on loan origination and performance (e.g. originating lender, date of origination, date of first payment, delinquency status). However, in order to examine racial discrimination in mortgage pricing, the Fannie Mae data lacks information on borrower race and ethnicity, as well as upfront loan costs. Therefore, to obtain information on these crucial variables, I merge the Fannie Mae data with HMDA data, which covers the vast majority (about 90%) of residential mortgage originations in the United States (Bhutta et al. 2017) and is the only source of loan-level information on the race and ethnicity of mortgage applicants.

Importantly for my data construction, the HMDA data provide information on the purchasing entity (e.g., whether it is a GSE or a private securitiser) when a loan is sold by the originator. After retaining only loans sold to Fannie Mae, I then merge the Fannie Mae and HMDA datasets by matching exactly on the following variables: year of origination, interest rate, loan purpose (e.g., purchase vs. refinance), loan amount, county code of the property, and presence of a

co-borrower.⁹ Since information on interest rates and upfront loan costs, which are important for the data merging process and loan pricing analysis, are only available from HMDA data since 2018, my study therefore only includes loans originated between 2018 and 2021, with 2021 being the last year for which I have information on local newspaper closures.

In addition, to standardise the mortgage pricing analysis, I follow Bartlett et al. (2022) and focus on loans that are 30-year, fixed-rate, first-lien, owner-occupied, and single-family.¹⁰ For both HMDA and Fannie Mae data, I use a 5% random sample to reduce the computational burden.¹¹ The final dataset used for the core analysis consists of 244,626 mortgage loans, representing approximately 88.6% of the Fannie Mae data that are uniquely matched to HMDA records. Table B1 provides details on the procedure and the quality of the matching.

Table 1 reports the summary statistics for the core mortgage data over the period 2018-2021. Minority borrowers, defined as either black or Hispanic, represent 15% of the sample population, with 4% identifying as black and 11% as Hispanic. The average mortgage rate is 3.50 pps, with a relatively small standard deviation of 0.73, reflecting a relatively stable interest rate environment over the period. Meanwhile, the average inflation rate is 2.79 pps. The inflation-adjusted mortgage rate is the primary dependent variable in the pricing analysis.

The dataset, which covers a representative sample of conforming fixed-rate mortgages, is skewed towards relatively high-quality borrowers with an average credit score of 757. Other key underwriting variables include an average loan-to-value ratio of 71.92%, an average debt-to-income ratio of 34.84%, an average loan size of \$300,950, and an average borrower income of \$106,460. The average points paid and the average total loan costs are 0.06% and 1.61% of the loan amount, respectively. In addition, Table ?? shows that 42% of loans have at least one co-borrower and 25% of loans are to first-time buyers. Refinance mortgages account for 58% of the loans, while 42% are purchase mortgages. Finally, delinquency as measured by the number of months in arrears is 0.27 months on average across the sample.

⁹Since the Fannie Mae data do not provide the county code of the property, I covert the zip code recorded in this dataset to the corresponding county code in order to match this property location information with the HMDA data. To avoid ambiguity, I exclude cases where a zip code has multiple county codes. Information on US zip codes and their corresponding county codes can be found at <https://www.kaggle.com/danofer/zipcodes-county-fips-crosswalk/data>.

¹⁰These criteria are applied in processing the HMDA and Fannie Mae data prior to merging the two datasets. Several other filters are also applied, including the exclusion of mortgages with prepayment penalties, interest-only mortgages, Home Affordable Refinance Programme (HARP) mortgages, and mortgages with original LTVs above 97%.

¹¹The practice of taking random samples from large loan-level datasets to ease the computational burden has been adopted by some previous studies, which show that it does not affect the robustness of the results (Akey et al. 2021).

Figures 1 and 2 provide a first glimpse into the differences in mortgage interest rates between minority and non-minority borrowers. Figure 1 shows the percentage of loans falling into different rate intervals. The median rate for non-minority borrowers is 3.25 pps, while it is 12.5 bps higher (at 3.375 pps) for minority borrowers, as indicated by the vertical lines. The concentration of interest rates for non-minorities below the 3.25 pps threshold compared to minorities also implies that minority borrowers generally face higher borrowing costs. Figure 2 provides a deeper insight the relationship between credit scores and median mortgage interest rates for minority and non-minority borrowers. Even as credit scores increase, minority borrowers continue to receive higher interest rates, although the gap narrows at higher credit scores.¹² While other risk factors, such as LTV ratios, may contribute to the observed disparities, the persistent and substantial rate gap warrants a closer examination of the factors driving these disparities and potential biases in the lending process.

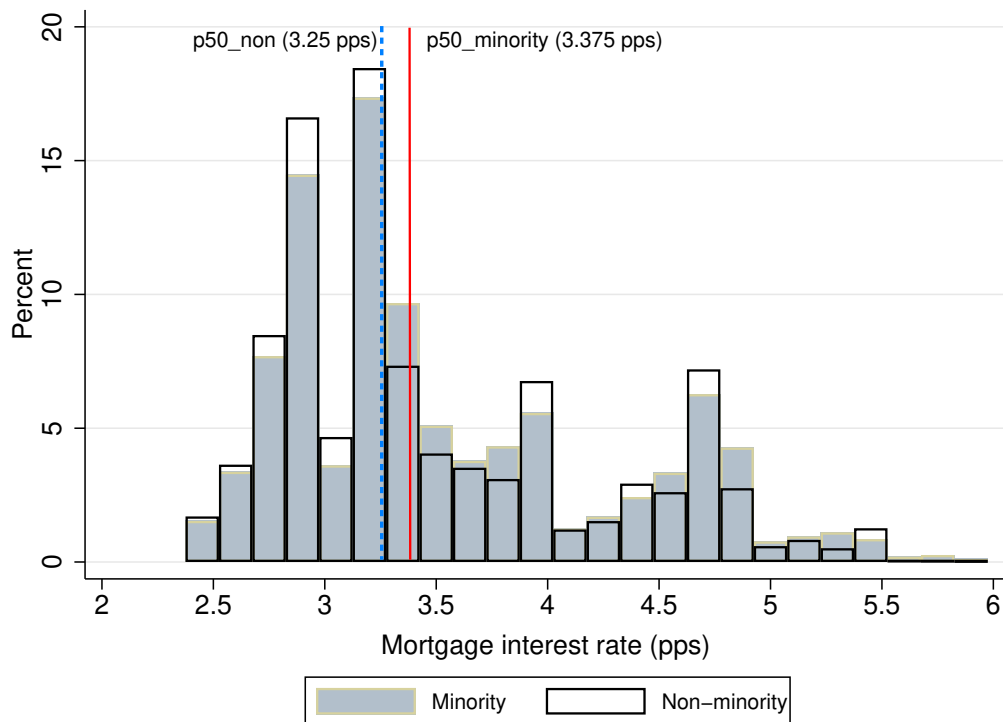
Table 1: Loan summary statistics

| | Mean | SD | Min | Median | Max | N |
|-----------------------------|--------|--------|---------|--------|----------|---------|
| Minority borrower | 0.15 | 0.36 | 0.00 | 0.00 | 1.00 | 244,626 |
| Black borrower | 0.04 | 0.20 | 0.00 | 0.00 | 1.00 | 244,626 |
| Hispanic borrower | 0.11 | 0.32 | 0.00 | 0.00 | 1.00 | 244,626 |
| Loan interest rate (pps) | 3.50 | 0.73 | 2.00 | 3.25 | 6.75 | 244,626 |
| Inflation rate (pps) | 2.79 | 1.52 | 1.23 | 2.44 | 4.70 | 244,626 |
| Credit score | 757.20 | 44.20 | 605.00 | 767.00 | 839.00 | 244,626 |
| Loan-to-value ratio (%) | 71.92 | 18.67 | 5.00 | 74.00 | 97.00 | 244,626 |
| Debt-to-income ratio (%) | 34.84 | 9.77 | 1.00 | 36.00 | 64.00 | 244,622 |
| Loan amount (\$, thousands) | 300.95 | 149.17 | 25.00 | 275.00 | 1,185.00 | 244,626 |
| Income (\$, thousands) | 106.46 | 84.74 | 0.00 | 90.00 | 1,714.00 | 244,626 |
| Points paid (%) | 0.06 | 2.35 | -862.68 | -0.02 | 5.83 | 159,718 |
| Total loan costs (%) | 1.61 | 1.27 | 0.00 | 1.39 | 200.65 | 234,636 |
| Coborrower presence | 0.42 | 0.49 | 0.00 | 0.00 | 1.00 | 244,626 |
| First-time homebuyer | 0.25 | 0.43 | 0.00 | 0.00 | 1.00 | 244,626 |
| Refinance | 0.58 | 0.49 | 0.00 | 1.00 | 1.00 | 244,626 |
| Cash-out refinance | 0.20 | 0.40 | 0.00 | 0.00 | 1.00 | 244,626 |
| Delinquency (#months) | 0.27 | 1.96 | 0.00 | 0.00 | 39.00 | 244,626 |

Notes: Data are Fannie-Mae-securitised 30-year, first-lien, single-family, owner-occupied, conforming fixed-rate mortgages obtained from a loan-level merge of HMDA and Fannie Mae loan performance data between 2018 and 2021. Inflation rate data are from FRED. A minority borrower refers to either a black or a Hispanic borrower.

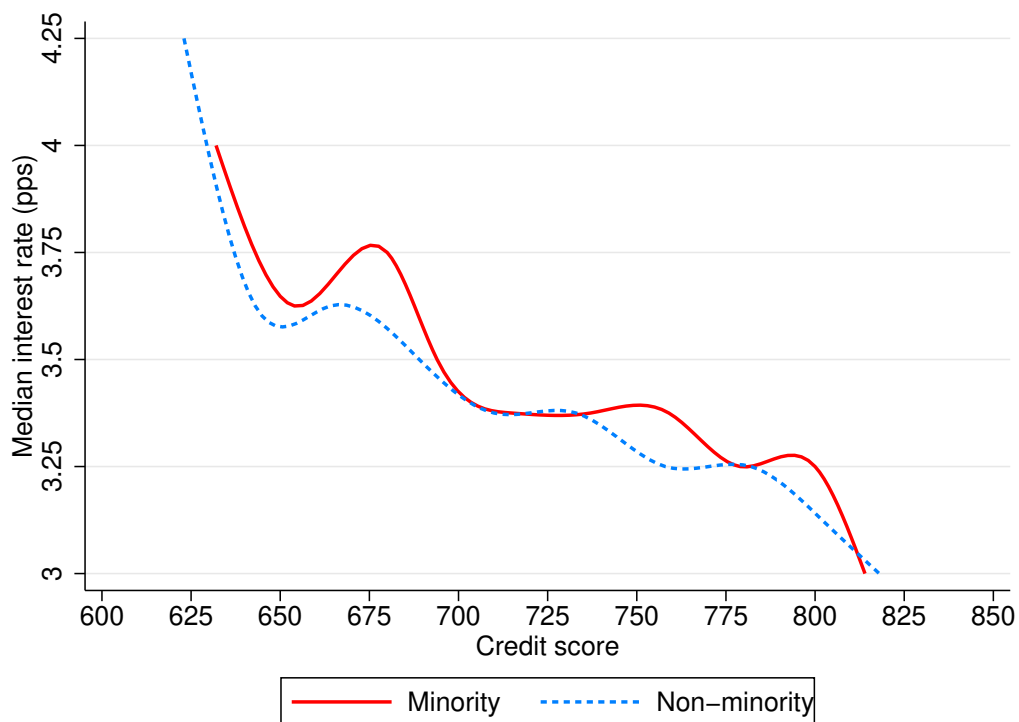
¹²Figure B1 in the Appendix shows a more detailed distribution of interest rates by credit score and minority status at the 10th, 50th and 90th percentiles. It is worth noting that the differences in interest rates between minority and non-minority borrowers are greater at the higher quantiles.

Figure 1: Histogram of interest rates by minority status



Notes: This figure plots the frequency distribution of interest rates (winsorised at the 1st and 99th percentiles) by minority status for 30-year, single-family, conforming fixed-rate mortgages securitised by Fannie Mae.

Figure 2: Median interest rates by credit score and minority status



Notes: This figure plots the median spline of interest rates (winsorised at the 1st and 99th percentiles) by minority status for 30-year, single-family, conforming fixed-rate mortgages securitised by Fannie Mae.

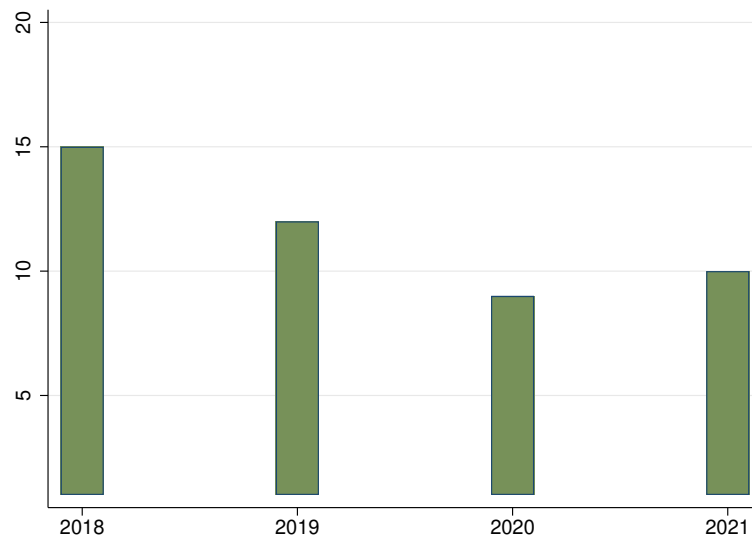
3.2 Newspaper data

I collect data on US local newspaper closures from several sources. First, I obtain lists of operating newspapers in the US in 2004, 2014, 2016, 2018, 2020 from the Newspaper Database of the Center for Innovation and Sustainability in Local Media at the University of North Carolina.¹³ Second, I use a matching technique to identify the newspapers that disappear over the years and then manually search for the reasons for their closure. I define newspaper closure as when a newspaper ceases publication and does not go online. In addition, I do not take into account name changes, mergers and acquisitions between newspapers, as their impact on data availability is likely to be modest. The exact closure year of defunct newspapers is identified and verified using information from the *Chronicling America's US Newspaper Directory*, the *Directory of US Newspapers in American Libraries*, combined with online resources such as the *Mundo Times* website on *USA Local News Media*.

From 2018 to 2021, I find 46 local newspaper closures in 46 counties. No county experiences more than one newspaper closure during the study period. Figures 3 and 4 illustrate the relatively even distribution of local newspaper closures across both time and geographic space in the US from 2018 to 2021. In particular, Figure 3 shows the number of closures per year over the period, with an average of 11 closures per year and a slightly declining trend. Figure 4 maps each closure event to the affected county, showing that no single region is overly concentrated. The fairly even geographical distribution suggests that newspaper closures are not driven by underlying economic conditions in a particular region, but rather by national, systemic issues affecting the entire news industry, such as competition from digital media and declining print advertising revenues.

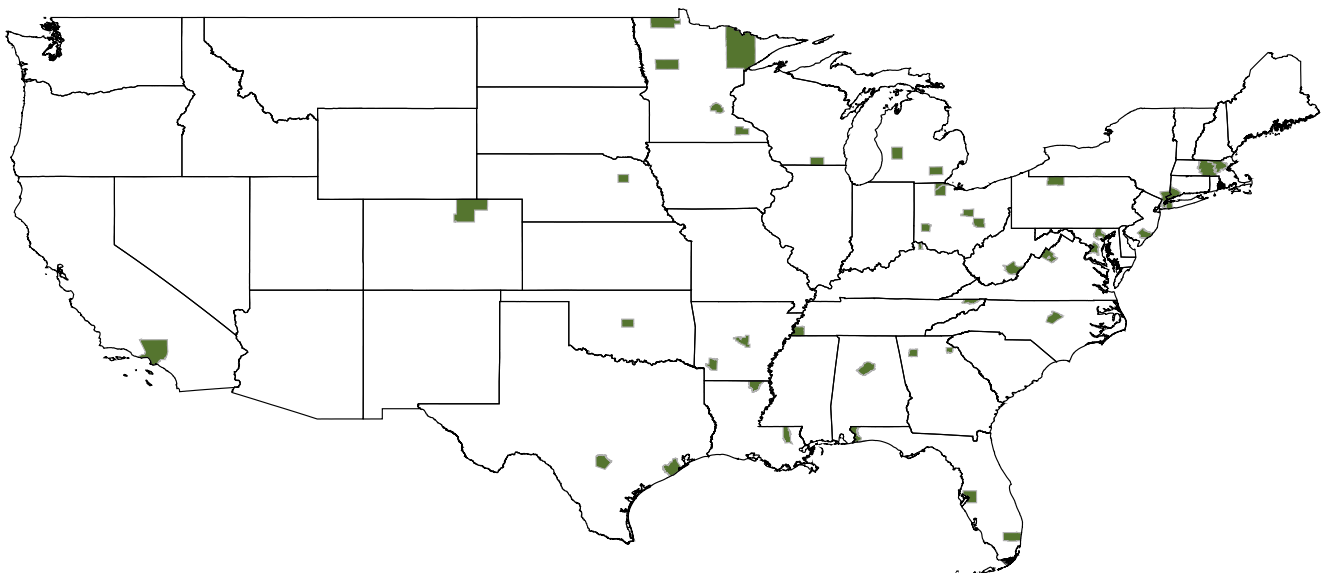
¹³This dataset is supplemented by the 2022 and 2023 updates from the Local News Initiative at Northwestern University <https://localnewsinitiative.northwestern.edu/projects/state-of-local-news/>.

Figure 3: Number of newspaper closures per year



Notes: This graph displays the number of local newspaper closures per year for the period 2018–2021.

Figure 4: Local newspaper closures in the United States



Notes: This map shows the geographical distribution of the 46 counties affected by the 46 local newspaper closures between 2018 and 2021.

4 Empirical Methodology and Results

4.1 Model

I use a staggered difference-in-differences (DiD) approach with a stacked regression estimator (Cengiz et al. 2019; Baker et al. 2022) to examine the effect of newspaper closures on discrimination in mortgage lending. The stacked regression estimator is used to mitigate concerns that post-closure observations from early closure counties may serve as controls for later closure counties, thereby introducing bias into the estimation of two-way fixed effects (TWFE) DiD regressions (Goodman-Bacon 2021). Following Cengiz et al. (2019), for each closure event and within a given treatment window, I construct a treatment group and a 'clean' control group (e.g. observations from counties that have not yet experienced a newspaper closure or have never experienced a newspaper closure). These event-specific datasets, each with its own unique identifying indicator, are then stacked together for the DiD regression. Finally, to account for repeated observations that may serve as controls in multiple events, the unit and time fixed effects are allowed to vary for each event (Cengiz et al. 2019).

To analyse shifts in the interest rate gap around a newspaper closure event, I use a three-year event window, including three years before and three years after a newspaper closure.¹⁴ Crucially, to avoid inaccuracies in identifying the exact timing of a closure, I exclude the closure years from the treatment window in my primary analysis, but include them as treatment years in a robustness check. Overall, the following regression model is used:

$$interest_rate_{i,m,c,t} = \alpha Minority_i \times PostClosure_{c,t} + \beta' X_{i,m,t} + \gamma' Z_{c,t} + f_{s,t} + f_{l,t} + \varepsilon_{i,m,c,t} \quad (1)$$

where the dependent variable $interest_rate_{i,m,c,t}$ denotes the inflation-adjusted mortgage interest rate for borrower i on mortgage m in county c in year t . The key interaction term $Minority_i \times PostClosure_{c,t}$ captures the effect of newspaper closures on minority borrowers, where $Minority_i$ is a dummy variable indicating whether the borrower is black

¹⁴Although my main dataset covers the period 2018-2021, I also collect data on newspaper closures for the period 2015-2017. This allows me to construct clean control groups for closures that occur between 2018-2021, enabling the use of a stacked regression approach. In particular, there are 33 local newspaper closures affecting 33 counties between 2015 and 2017, with 14 closures in 2015, 8 closures in 2016, and 11 closures in 2017.

or Hispanic, and $PostClosure_{c,t}$ is a dummy equal to 1 for closure counties in the three years following a newspaper closure (excluding closure years) and 0 otherwise. If the closure of a local newspaper leads to higher mortgage rates for minority borrowers compared to non-minority borrowers, the coefficient of interest α will be positive.

My model includes loan-, borrower- and county-level controls to isolate the causal effect of newspaper closures from other determinants of mortgage rates. Specifically, $X_{i,m,t}$ is a vector of borrower and loan controls, including borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). These standard underwriting variables, which are widely used in mortgage pricing studies (Bhutta and Hizmo 2021; Fuster et al. 2019; Cheng et al. 2015), ensure that the effect of newspaper closures on interest rates is not confounded by variations in borrower creditworthiness or loan risk profiles. At the county level, the set of control variables $Z_{c,t}$ includes the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, poverty rate, unemployment rate, homeownership rate, and minority population share.¹⁵ These variables control for broader regional economic and demographic factors that may affect local news businesses and lending conditions, thus helping to address concerns that local economic trends may drive both newspaper closures and discriminatory lending practices.

I also include state-year and lender-year fixed effects to control for possible omitted factors in my main analyses. First, the inclusion of the state-year fixed effects $f_{s,t}$ implies that the coefficient of interest α captures the effect of a newspaper closure in the affected county relative to other counties with no newspaper closures within the same state and in the same year. Put differently, my model eliminates any confounding influence of unobserved, time-varying, and state-level factors such as changes in economic conditions and regulatory policies. Second, the lender-year fixed effects $f_{l,t}$ control for lender-specific factors such as differences in lending practices, risk tolerance, or funding costs that vary across lenders over time. Finally, the standard errors $\varepsilon_{i,m,c,t}$ are clustered at the county level to account for potential autocorrelation.

¹⁵See Table B2 for the summary statistics of the county-level controls.

4.2 Baseline estimates

Table 2 shows the regression results of the analysis examining the impact of local newspaper closures on mortgage rate differentials between minority and non-minority borrowers. The analysis proceeds through four models, each of which aims to refine the analysis by introducing an additional control group. Column 1 presents the simplest specification, estimating the interest rate gap before and after a newspaper closure without macro- and loan-level controls.¹⁶ State-year fixed effects and county controls are added sequentially in columns (2) and (3). The addition of county controls slightly reduces the pre-closure interest rate gap and reveals a statistical significance at the 10% level of the closure effect on mortgages to minority borrowers. This suggests that while county-level characteristics may explain part of the observed interest rate differential, a substantial part remains unexplained.

The addition of borrower and loan controls in column (4) significantly reduces the racial and ethnic differences in mortgage rates, with a 46.6% reduction from 6.67 bps in column (3) to 3.56 bps in column (4). The estimate of the *Minority* \times *PostClosure* coefficient also increases in economic and statistical significance (from 4.62 bps to 5.79 bps and from the 10% significance level to the 5% significance level, respectively) after these standard underwriting controls are added. The results in column (4) have two important implications: (i) credit risk differences can explain almost half, but not all, of the observed racial and ethnic differences; and (ii) the interest rate differential between minority and comparable non-minority borrowers increases by almost 5.8 bps after a newspaper closure, which is substantial given the pre-closure gap of 3.6 bps.

The inclusion of lender-year fixed effects in column (5) has little effect on the estimated racial and ethnic differences before and after newspaper closures. Comparing column (5) to column (4), the *Minority* coefficient decreases only marginally from 3.56 bps to 3.39 bps, while the *Minority* \times *PostClosure* coefficient also shows minimal change, shifting from 5.79 bps to 5.64 bps. These results suggest that discriminatory practices exist within individual lenders, and that a significant portion of the observed racial and ethnic disparities are not due to variations in lender behaviour, but rather reflect deeper, systemic

¹⁶The high adjusted R-squared value, even in this simplest implication, is due to the unit-time and event-time fixed effects of the stacked regression.

issues within the mortgage lending process. The minimal impact of lender fixed effects in my model contrasts with the findings of Bayer et al. (2018), who find that differences across lenders help explain much of the racial and ethnic differences in subprime mortgages. The fact that my sample includes only conforming mortgages explains the small differences across lenders, who must follow a standardised pricing guideline provided by the GSEs.¹⁷

Table 2: Newspaper closures and interest-rate differentials between minority and non-minority borrowers

| | Dependent variable: Interest rate | | | | |
|---|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | (1) | (2) | (3) | (4) | (5) |
| Minority _i | 0.0721*** (0.0205) | 0.0773*** (0.0109) | 0.0667*** (0.0102) | 0.0356*** (0.0079) | 0.0339*** (0.0076) |
| Minority _i × PostClosure _{ct} | 0.0140 (0.0365) | 0.0352 (0.0280) | 0.0462* (0.0265) | 0.0579** (0.0229) | 0.0564** (0.0219) |
| State × Year FE | | Y | Y | Y | Y |
| County controls | | | Y | Y | Y |
| Borrower and loan controls | | | | Y | Y |
| Lender × Year FE | | | | | Y |
| Adj.R-squared | 0.966 | 0.971 | 0.972 | 0.975 | 0.976 |
| Observations | 816,317 | 816,317 | 809,221 | 778,307 | 778,307 |

Notes: * p<.10; ** p<.05; *** p<.01. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. Closure is a dummy equal to 1 for closure counties in the closure year, and 0 otherwise. PreClosure is a dummy equal to 1 for closure counties in the three years before the closure year, and 0 otherwise. PostClosure is a dummy equal to 1 for closure counties in the three years after the closure year, and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. Standard errors in parentheses are clustered at the county level.

Overall, two main findings emerge from Table 2. First, the significant impact of newspaper closures in widening the interest rate gap between minority and comparable non-minority borrowers highlights the role of local media in the mortgage market. Without the scrutiny of local journalism, minority borrowers are likely to face greater discrimination in the form of higher interest rates. Second, the persistence of the minority interest rate premium, even after extensive controls and without the loss of local newspapers, suggests that discriminatory practices in mortgage lending continue to disadvantage minority borrowers, consistent with the findings of Bartlett et al. (2022).¹⁸

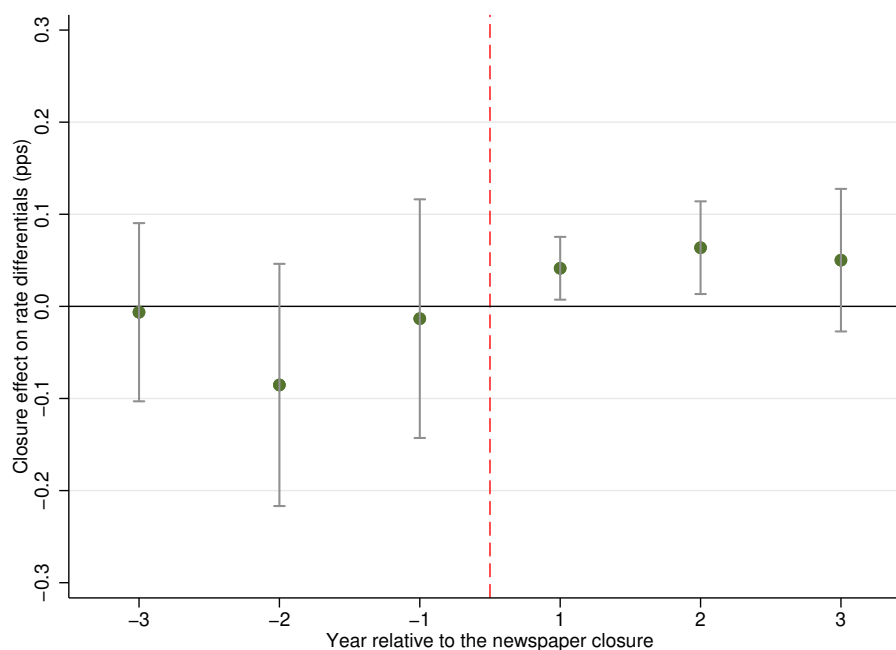
¹⁷While GSE pricing guidelines provide some standardisation, differences in lenders' risk assessments can still lead to disparities in mortgage pricing for minority borrowers.

¹⁸For a direct comparison with the study of Bartlett et al. (2022), Tables B3 and B4 in the Appendix report the

4.3 Dynamic effects

Figure 5 illustrates the dynamic effects of newspaper closures on the interest rate differentials between minority and non-minority borrowers around the closure event. In particular, I re-estimate equation (1) by replacing the *PostClosure* dummy with a series of indicator variables, each indicating a year over the event window from $t - 3$ to $t + 3$, and each interacted with the *Minority* dummy. I drop the indicator for the closure year $t = 0$, which serves as a reference point. In Figure 5, the vertical dashed line represents the closure year ($t = 0$), and the point estimates show how the gap between minority and non-minority interest rates evolves before and after a newspaper closure.

Figure 5: Dynamic effects of newspaper closures on the interest-rate difference between minority and non-minority borrowers



Notes: This figure plots the coefficient estimates of the closure effect on the interest-rate differentials between minority and non-minority borrowers around the closure year.

Figure 5 shows that there is no significant change in interest rate differentials between minority and non-minority borrowers prior to a newspaper closure, as the pre-closure estimates hover around zero and are not statistically significant. The absence of pre-trends

estimate of the *Minority* coefficient from two different model specifications: one similar to the model presented in Equation (1), but replacing the interaction term $Minority \times PostClosure$ with the *Minority* dummy (Table B3), and one mimicking the model of Bartlett et al. (2022), where the standard underwriting variables are interacted with year fixed effects (Table B4). Comparing the results in the two tables, there is almost no difference in the estimated interest rate gap using the two models.

is an important indication that the parallel trend assumption holds, which strengthens the credibility of the difference-in-differences (DiD) approach. The positive and statistically significant post-closure estimates suggest that racial and ethnic disparities in mortgage rates increase significantly following a newspaper closure. As the information environment deteriorates and local monitoring weakens, lenders may begin to treat minority borrowers less favourably. Moreover, the persistence of these positive estimates after closure underlines the potential long-term impact of newspaper closures on discrimination in mortgage lending.

4.4 Enhancing identification

In this section, I extend the identification strategy of the main analysis by applying several empirical techniques to strengthen the credibility of my findings. In particular, to address concerns that both the closure of local newspapers and the increase in discriminatory lending practices are driven by unobserved local economic trends, I conduct (i) two cross-sectional tests, (ii) a falsification test, and (iii) a matching analysis. The details of these tests are described below.

4.4.1 Cross-sectional analyses

I conduct two cross-sectional tests to examine whether (i) different levels of scrutiny by the local press or (ii) different levels of exposure to local news vary the effect of newspaper closures on mortgage discrimination. If underlying economic conditions are likely to drive my results, then the level of mortgage discrimination should be independent of these two factors. Based on this argument, the first column of Table 3 examines the differential closure effect in counties with a low number of newspapers compared to counties with a high number of newspapers.¹⁹ Newspaper closures in counties with many newspapers are unlikely to have a strong effect on discriminatory lending decisions because other newspapers can act as substitutes. However, the opposite is true for closures in counties with only one or a few newspapers. Indeed, the results in column (1) show that after a newspaper closure, a minority borrower in a high newspaper county pays 4.57 bps more than a comparable non-minority borrower, while this difference is up to $4.57 + 2.86 = 7.43$ bps more for a minority borrower in a low newspaper county.

The second test considers the difference between first-time and repeat homebuyers in

¹⁹Following Gao et al. (2020b), I define a low (high) newspaper county as a county with fewer (more) than three newspapers prior to a newspaper closure.

their experience of the mortgage market and, therefore, their incentive to seek information from the media. From the lender’s perspective, it is easier to price discriminate against minority first-time homebuyers who lack experience of the mortgage market. At the same time, because of their inexperience, first-time homebuyers (FTBs) are more likely to rely on external sources of information to understand the mortgage process, loan options, lending regulations, and local housing policies. If the effect of newspaper closures on mortgage discrimination does exist, the closure of local newspapers would potentially affect first-time homebuyers more than repeat homebuyers. Consistent with this expectation, column (2) of Table 3 shows that the $Minority \times FTB$ is positive and highly significant, implying that minority first-time homebuyers face steeper interest rate differentials. In addition, the post-closure increase in price discrimination is also higher for loans to minority first-time homebuyers than to minority repeat homebuyers, as indicated by the positive coefficient of the interaction term $Minority \times PostClosure \times FTB$. However, the fact that this coefficient is only significant at the 10% level suggests that the differential effect of newspaper closures on minority first-time homebuyers is not pronounced.

Table 3: Cross-sectional tests

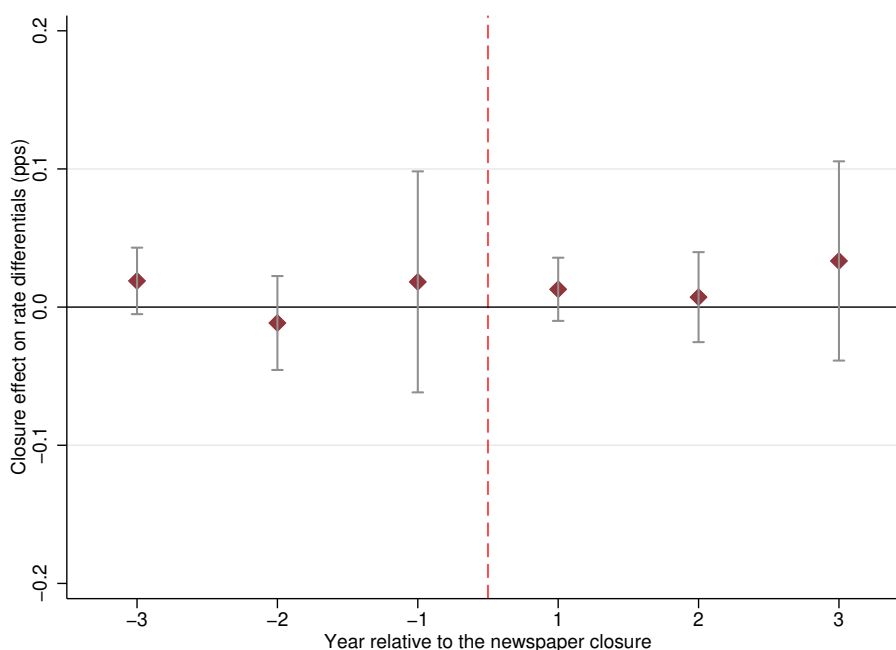
| Dependent variable: Interest rate | | | |
|---|---------------------------------------|--|--|
| | Counties with low vs. high newspapers | | First-time homebuyers vs repeat homebuyers |
| | (1) | | (2) |
| Minority _i | 0.0390*** (0.0081) | Minority _i | 0.0283*** (0.0090) |
| Minority _i × Low_NP_county _{ct} | 0.0213 (0.0163) | Minority _i × FTB _i | 0.0291*** (0.0115) |
| Minority _i × PostClosure _{ct} | 0.0457** (0.0216) | Minority _i × PostClosure _{ct} | 0.0565*** (0.0212) |
| Minority _i × PostClosure _{ct} × Low_NP_county _{ct} | 0.0286*** (0.0059) | Minority _i × PostClosure _{ct} × FTB _i | 0.0234* (0.0127) |
| State × Year FE | Y | | Y |
| County controls | Y | | Y |
| Borrower and loan controls | Y | | Y |
| Lender × Year FE | Y | | Y |
| Adj.R-squared | 0.976 | | 0.976 |
| Observations | 778,307 | | 778,307 |

Notes: * p<.10; ** p<.05; *** p<.01. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. Closure is a dummy equal to 1 for closure counties in the closure year, and 0 otherwise. PreClosure is a dummy equal to 1 for closure counties in the three years before the closure year, and 0 otherwise. PostClosure is a dummy equal to 1 for closure counties in the three years after the closure year, and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. Column (1) examines the effect of a newspaper closure on the interest rate differentials between minority and non-minority borrowers in low-newspaper counties relative to high-newspaper counties. Low NP county is a dummy equal to 1 if the county in which the loan was originated is a low-newspaper county, and 0 otherwise. Low (high) newspaper counties are counties with fewer (more) than three newspapers prior to a closure. Column (2) examines the differential closure effects between first-time and repeat homebuyers. FTB is a dummy equal to 1 if the borrower is a first-time homebuyer and 0 otherwise. Standard errors in parentheses are clustered at the county level.

4.4.2 Falsification test

I also conduct a falsification test to prove the effect of newspaper closures. Following Heese et al. (2022), I create pseudo newspaper closure events by randomising the year in which each newspaper closes. The rationale is that if changes in unobserved regional-level characteristics are responsible for the increase in discriminatory lending, I would obtain a similar closure effect using the pseudo closure events. Similar to Figure 5, Figure 6 plots the dynamic effect of newspaper closures on interest rate differentials between minority and non-minority borrowers, but this time using the randomised treatment years. As shown in the figure, none of the coefficient estimates are statistically significantly different from zero. This result strengthens the validity of my earlier findings by showing that in the absence of actual newspaper closures, there are no significant changes in the racial and ethnic interest rate gap.

Figure 6: Falsification test



Notes: This figure plots the coefficient estimates of the pseudo-closure effect on the interest-rate differentials between minority and non-minority borrowers around the closure year. A uniform distribution is used to randomize the year in which each newspaper closes.

4.4.3 Matching analysis

As a further attempt to address the possibility that unobserved, systemic differences between closure and non-closure counties drive the results, I conduct a matching analysis

using matched neighbouring counties as a control group. A propensity score matching approach is used to match a closure county with a non-closure county from the same state that has similar economic and demographic characteristics. Using matched counties as a control group helps to refine the estimation of the closure effect by providing a more accurate counterfactual. If worsening economic conditions in the region were responsible for the increase in mortgage discrimination, there should be no closure effect using the matched sample.

To calculate the propensity score, all county control variables are used and the radius (or 'caliper') of the propensity score is set at 0.05. The covariate balance test reported in Table 4 shows that the differences between closure and matched counties on key socio-economic variables are minimal, as none of the differences are statistically significant at conventional levels.²⁰ Table 5 reports the regression results of Equation (1) using the matched sample.

Table 4: Covariate balance test

| | Mean closure county | Mean matched county | Difference | Std. Error | N |
|-------------------------------|------------------------|------------------------|------------|------------|-----|
| ln(Population) | 12.60 | 12.27 | -0.33 | (0.22) | 368 |
| ln(Population density) | 5.49 | 5.41 | -0.08 | (0.21) | 368 |
| ln(Per capita income) | 10.91 | 10.93 | 0.02 | (0.03) | 368 |
| Below poverty rate (%) | 13.05 | 13.09 | 0.04 | (0.61) | 368 |
| Unemployment rate (%) | 5.58 | 5.82 | 0.24 | (0.35) | 368 |
| Homeownership rate (%) | 66.52 | 68.41 | 1.88 | (1.29) | 368 |
| Minority population share (%) | 22.72 | 21.66 | -1.06 | (2.08) | 368 |

Notes: Difference defined as 'Mean matched county - Mean closure county'. The 368 observations correspond to data from 46 closure counties and 46 matched non-closure counties over the four-year period, 2018-2021.

Compared with the baseline results (see column (5), Table 2), the *Minority* × *PostClosure* coefficient using the matched sample falls significantly, from 5.64 bps to 2.47 bps, while the *Minority* estimate remains robust. The smaller closure effect in the matched sample suggests that some of the larger closure effect observed in the baseline model may have been driven by unobserved differences between counties with and without closures that are better captured in the matched sample. This potentially more accurate estimation is further confirmed by Figure 7, which illustrates the dynamic effects of newspaper closures on interest rate differentials using the matched sample. In particular, while Figures 5 and

²⁰Table B5 reports the county-level summary statistics for the closure counties and the matched non-closure counties over the study period.

7 show a similar pattern of pre- and post-closure fluctuations around zero of the closure effect estimate, the estimates in Figure 6 show greater statistical precision and confidence. The fact that the closure effect remains statistically significant in the matched sample, albeit smaller, suggests that minority borrowers are indeed disproportionately affected by local newspaper closures.

Table 5: Regression with matched counties as control groups

| Dependent variable: Interest rate | |
|---|-----------------------|
| Minority _i | 0.0379*** (0.0083) |
| Minority _i × PostClosure _{ct} | 0.0247** (0.0104) |
| State × Year FE | Y |
| County controls | Y |
| Borrower and loan controls | Y |
| Lender × Year FE | Y |
| Adj.R-squared | 0.976 |
| Observations | 116,157 |

Notes: * p<.10; ** p<.05; *** p<.01. This table presents regression results using matched counties with closure counties as control groups. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. Closure is a dummy equal to 1 for closure counties in the closure year, and 0 otherwise. PreClosure is a dummy equal to 1 for closure counties in the three years before the closure year, and 0 otherwise. PostClosure is a dummy equal to 1 for closure counties in the three years after the closure year, and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. Standard errors in parentheses are clustered at the county level.

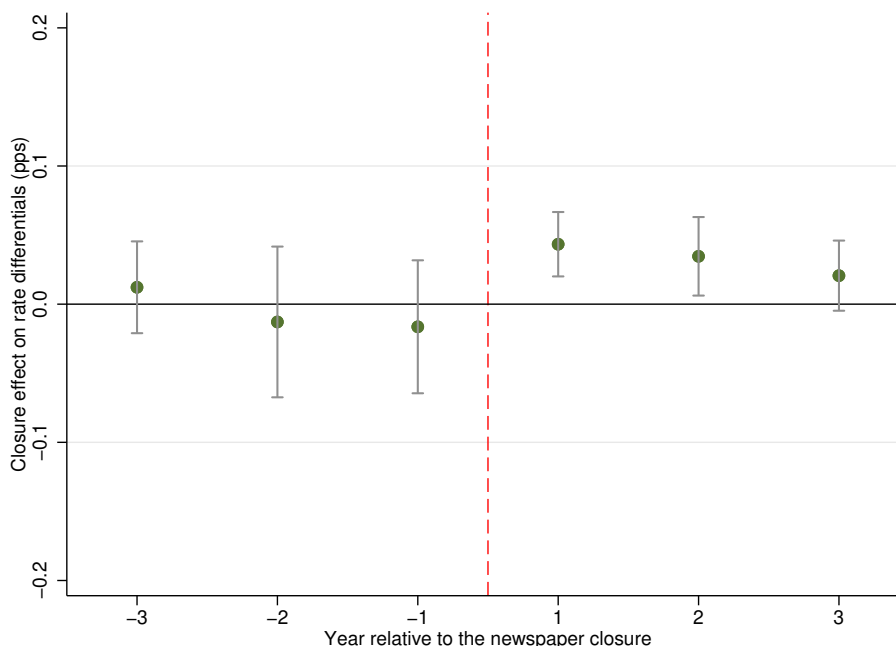
5 Heterogeneity

I have shown that local newspaper closures lead to increased price discrimination against minority mortgage borrowers. In this section, I examine how the newspaper closure effect varies by (i) lender type (banks vs. non-banks), loan purpose (purchase vs. refinance mortgages), and specific minority groups (blacks vs. Hispanics).

5.1 Newspaper closure effects by lenders

Table 6 examines the effect of newspaper closures on mortgage interest rates for traditional banks, non-bank lenders (a.k.a. shadow banks) and FinTech lenders, highlighting key differences in their lending practices. The results show that traditional banks significantly

Figure 7: Dynamic effects of newspaper closures on the interest-rate difference between minority and non-minority borrowers for the matched sample



Notes: This figure plots the coefficient estimates of the closure effect on the interest-rate differentials between minority and non-minority borrowers around the closure year for the matched sample.

increase interest rates for minority borrowers following a newspaper closure (by 5.52 bps, $p < 0.05$). Meanwhile, there is no significant newspaper closure effect for non-banks and FinTech lenders. One possible explanation for this disparity lies in the relationship between traditional banks and local news media. Specifically, because of their long-standing ties to local communities, traditional banks are subject to greater scrutiny by local journalism, which can act as an informal regulatory check on their lending practices (Houston et al. 2011; Ho et al. 2016). When local newspapers close, this media scrutiny diminishes, giving traditional banks more leeway to engage in discriminatory pricing. Non-banks, on the other hand, tend to operate outside community-based relationships and are less reliant on local information. As a result, newspaper closures have a muted effect on the behaviour of non-bank lenders.

It should be noted that table 6 also reveals a consistent interest rate premium for minority borrowers across all lender types. For example, traditional banks charge minority borrowers about 4.44 bps more than non-minorities, while non-bank lenders charge 3.62 bps more on average. Looking only at non-bank loans, FinTech lenders have a much

lower minority premium than non-FinTech lenders (2.42 bps compared to 4.08 bps). This difference is likely due to structural differences in pricing mechanisms between these lenders. In particular, the big data approaches and technology-based lending of FinTech lenders in assessing borrower risk may reduce the human biases that arise in the more relationship-based lending models of traditional banks (Ross et al. 2008; Hanson et al. 2016; Buchak et al. 2018).²¹

Table 6: Newspaper closure effect by lenders

| | Dependent variable: Interest rate | | | | | |
|---|-----------------------------------|-----------------------|-----------------------|--------------------------------|----------------------|-----------------------|
| | All lenders: | | | Non-banks only: | | |
| | banks vs. non-banks | | | FinTech vs non-FinTech lenders | | |
| | Pooled | Bank | Non-bank | Pooled | FinTech | Non-FinTech |
| (1) | (2) | (3) | (4) | (5) | (6) | |
| Minority _i | 0.0473*** (0.0133) | 0.0444*** (0.0102) | 0.0362*** (0.0050) | 0.0428*** (0.0059) | 0.0242** (0.0099) | 0.0408*** (0.0049) |
| Non-bank _i | -0.0133 (0.0093) | | | | | |
| Minority _i × Non-bank _i | -0.0101 (0.0134) | | | | | |
| FinTech _i | | | | 0.0057 (0.0110) | | |
| Minority _i × FinTech _i | | | | -0.0199 (0.0123) | | |
| Minority _i × PostClosure _{ct} | 0.0452* (0.0248) | 0.0552** (0.0260) | 0.0401 (0.0256) | 0.0403 (0.0256) | 0.0398 (0.0348) | 0.0391 (0.0251) |
| State × Year FE | Y | Y | Y | Y | Y | Y |
| County controls | Y | Y | Y | Y | Y | Y |
| Borrower and loan controls | Y | Y | Y | Y | Y | Y |
| Lender × Year FE | N | Y | Y | N | Y | Y |
| Adj.R-squared | 0.976 | 0.969 | 0.979 | 0.979 | 0.977 | 0.980 |
| Observations | 409,100 | 117,922 | 291,178 | 291,178 | 54,329 | 236,849 |

Notes: * p<.10; ** p<.05; *** p<.01. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. Non-bank is a dummy equal to 1 if the lender is classified as a non-bank financial institution (i.e. shadow bank), and 0 other wise. FinTech is a dummy equal to 1 if the lender is classified as a FinTech lender, and 0 other wise. For the definition of non-bank and FinTech lenders, this paper follows the list of platform lenders in Buchak et al. (2018). Closure is a dummy equal to 1 for closure counties in the closure year, and 0 otherwise. PreClosure is a dummy equal to 1 for closure counties in the three years before the closure year, and 0 otherwise. PostClosure is a dummy equal to 1 for closure counties in the three years after the closure year, and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. Standard errors in parentheses are clustered at the county level.

²¹Regarding human bias in mortgage lending, one example is the “thick file” phenomenon, which describes how loan officers at Decatur Federal in Atlanta provide more assistance to white borrowers than to minority borrowers. This practice results in more comprehensive application files for white borrowers, which increases their likelihood of loan approval (Ladd 1998).

5.2 Newspaper closure effects by loan types and minority groups

Table 7 shows an important distinction between the effect of newspaper closures on purchase and refinance loans, broken down by specific minority groups. For purchase loans, minorities experience a significant increase in post-closure rates of 5.39 bps overall (column (2)), with blacks paying 5.09 bps more and Hispanics paying 5.46 bps more (column (5)). In contrast, for refinance mortgages, the effect of newspaper closures is not statistically significant, either overall or for any minority group (columns (3) and (6)). Moreover, pre-closure racial and ethnic differences in interest rates are also smaller for refinance loans (2.67 bps) than for purchase loans (4.52 bps).

Table 7: Newspaper closure effect by loan types and minority groups

| | Dependent variable: Interest rate | | | | | |
|---|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Pooled (1) | Purchase (2) | Refinance (3) | Pooled (4) | Purchase (5) | Refinance (6) |
| Minority _i | 0.0339*** (0.0076) | 0.0452*** (0.0077) | 0.0267*** (0.0074) | | | |
| Minority _i × PostClosure _{ct} | 0.0564** (0.0219) | 0.0539** (0.0250) | 0.0162 (0.0108) | | | |
| Black _i | | | | 0.0568*** (0.0167) | 0.0565*** (0.0103) | 0.0463*** (0.0171) |
| Black _i × PostClosure _{ct} | | | | 0.0486* (0.0274) | 0.0509* (0.0289) | 0.0073 (0.0193) |
| Hispanic _i | | | | 0.0255*** (0.0083) | 0.0404*** (0.0098) | 0.0202** (0.0079) |
| Hispanic _i × PostClosure _{ct} | | | | 0.0590*** (0.0217) | 0.0546** (0.0255) | 0.0191 (0.0120) |
| State × Year FE | Y | Y | Y | Y | Y | Y |
| County controls | Y | Y | Y | Y | Y | Y |
| Borrower and loan controls | Y | Y | Y | Y | Y | Y |
| Lender × Year FE | Y | Y | Y | Y | Y | Y |
| Adj.R-squared | 0.976 | 0.975 | 0.980 | 0.976 | 0.975 | 0.980 |
| Observations | 778,307 | 343,786 | 434,521 | 778,307 | 343,786 | 434,521 |

Notes: * p<.10; ** p<.05; *** p<.01. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. Black is a dummy equal to 1 if the borrower is black and 0 otherwise. Hispanic is a dummy equal to 1 if the borrower is Hispanic and 0 otherwise. Closure is a dummy equal to 1 for closure counties in the closure year, and 0 otherwise. PreClosure is a dummy equal to 1 for closure counties in the three years before the closure year, and 0 otherwise. PostClosure is a dummy equal to 1 for closure counties in the three years after the closure year, and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance, these loan purpose dummies only included for columns (1) and (4)). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. Standard errors in parentheses are clustered at the county level.

These results plausibly reflect differences in the nature and borrower experience of the two types of loan. From the lender’s perspective, purchase loans carry a higher perceived risk because they involve new collateral and less established borrower histories. In turn, purchase borrowers, especially first-time homebuyers, tend to have limited experience of the mortgage market and less bargaining power, making them more vulnerable to lender discretion in pricing. Refinance loans, on the other hand, tend to involve borrowers with existing relationships and collateral, which may reduce perceived risk. In addition, the experience and knowledge of refinance borrowers in the mortgage market also leaves lenders with less room for pricing discretion, even with reduced local media scrutiny.

Comparing the results for black and Hispanic borrowers in Table 7 further suggests that black borrowers experience a larger pre-closure rate gap than Hispanic borrowers, with a premium of 5.68 bps versus 2.55 bps, respectively. However, the newspaper closure effect is rather similar for both groups, suggesting that both black and Hispanic borrowers are equally vulnerable to discriminatory pricing practices in the loss of local news, regardless of their pre-closure rate gap.

6 Robustness Checks

This section presents a series of robustness checks that examine the extent to which my baseline results are conditional on (i) unobserved credit risks, (ii) the measurement of minority status, and (iii) the definition of treatment years.

6.1 Default risk

Despite extensive controls on borrower and loan characteristics, there may be other risk factors perceived by lenders that are not captured in my baseline model, such as borrower default risk. Even for GSEs-securitised loans, servicers still incur significant costs in servicing delinquent borrowers, including foreclosure proceedings and legal fees (Kim et al. 2018). These differences in servicing costs may contribute to the interest rate differentials observed across borrower demographics and loan types. For example, minority borrowers may face higher interest rates due to higher perceived or actual servicing costs. For this reason, column (1) of Table 8 adds a control for borrower delinquency to the baseline model to account for default risk.

As shown in Table 8, the results remain robust to this change. The initial minority interest rate gap is about 3.45 bps, and it increases by a further 5.73 bps following a newspaper closure, similar to the results reported in Table 2. The delinquency variable itself is also statistically significant (1.85 bps, $p < 0.01$), suggesting that default risk does affect interest rates. However, the fact that interest rate differentials remain significant after controlling for delinquency implies that default risk alone does not explain the higher interest rates for minority borrowers.

Table 8: Robustness Checks

| | Dependent variable: Interest rate | | |
|---|---|---|---|
| | Additional control for default risks | Alternative measurement of minority status | Alternative definition of treatment period |
| | (1) | (2) | (3) |
| Minority _i | 0.0345*** (0.0076) | 0.0291*** (0.0075) | 0.0353*** (0.0071) |
| Minority _i x PostClosure _{ct} | 0.0573*** (0.0211) | 0.0599*** (0.0214) | 0.0400** (0.0197) |
| Delinquency _i | 0.0185*** (0.0038) | | |
| State × Year FE | Y | Y | Y |
| County controls | Y | Y | Y |
| Borrower and loan controls | Y | Y | Y |
| Lender × Year FE | Y | Y | Y |
| Adj.R-squared | 0.976 | 0.976 | 0.976 |
| Observations | 778,307 | 778,307 | 778,307 |

Notes: * $p < .10$; ** $p < .05$; *** $p < .01$. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic, and 0 otherwise. Closure is a dummy equal to 1 for closure counties in the closure year, and 0 otherwise. PreClosure is a dummy equal to 1 for closure counties in the three years before the closure year, and 0 otherwise. PostClosure is a dummy equal to 1 for closure counties in the three years after the closure year, and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. The model in column (1) introduces an additional control for default risk into the baseline model. The corresponding 'Delinquency' variable indicates the number of months the loan is delinquent. The model in column (2) sets the Minority dummy to 1 if either the borrower or the first coborrower is black or Hispanic, and 0 otherwise. The model in column (3) includes years of newspaper closures as treatment years, rather than dropping them as in the baseline model.

6.2 Alternative measurement of minority status

In the main analysis, minority status is defined by whether the primary borrower is black or Hispanic. In this test, I redefine the minority status variable to equal 1 if either the primary borrower or the first co-borrower is black or Hispanic. As shown in column (2) of Table 8, this broader definition barely changes the results, confirming that my results are robust to the measurement of minority status.

6.3 Alternative definition of treatment period

This robustness check examines an alternative specification for the treatment period following a newspaper closure. Specifically, it extends the treatment period by including the year of the newspaper closure, resulting in a four-year treatment window, as opposed to the three-year window in the main analysis. One reason for excluding the closure year from the treatment window in the main analysis is to allow time for reduced local news coverage to affect lender behaviour. In addition, there is a precautionary consideration regarding potential errors in identifying the exact timing of newspaper closures, which could lead to biased estimates. Column (3) of Table 8 shows that the main results remain consistent when closure years are included in the treatment window, with a significant, albeit smaller, closure effect of 4 bps.

7 Accept/Reject Discrimination

In this section, I examine the effect of newspaper closures on denial rates for minority borrowers. This analysis is important because it expands the scope of the main analysis beyond interest rate differentials, focusing instead on the outright acceptance or rejection of loan applications. While interest rate differentials shed light on price discrimination, the analysis of denial rates helps to capture potential barriers to credit faced by minority borrowers. These barriers may not be visible in interest rate differentials but may have a significant impact on access to credit. The methodological approach is the same as in the main analysis, except that I replace the interest rate with the mortgage denial indicator as the dependent variable in Equation (1). A major limitation of this analysis is the lack of loan-level data on the credit scores and LTV ratios of rejected applicants. Following Bartlett et al. (2022), I use county-level averages of these variables for each minority group as proxies. Table B6 in the Appendix provides the descriptive statistics for all the variables used in this analysis. Table 9 reports the empirical results.

As shown in Table 9, minority borrowers experience significantly higher rejection rates than non-minorities prior to newspaper closures, with minority rejection rates almost 5 pps higher for purchase loans (column (1)) and 8 pps higher for refinance loans (column (2)). Following a newspaper closure, the denial rate for minority borrowers increases by an

additional 1.91 pps for purchase loans, as indicated by the coefficient on the interaction term $Minority_i \times PostClosure_{ct}$. However, this effect is not statistically significant for refinance loans, similar to the analysis of interest rate differentials. Overall, these suggestive results point to deep-rooted inequalities in mortgage lending that warrant further investigation.

Table 9: Accept/Reject discrimination

| | Dependent variable: Denial rate | |
|---|---------------------------------|-----------------------|
| | Purchase (1) | Refinance (2) |
| Minority _i | 0.0490*** (0.0033) | 0.0820*** (0.0051) |
| Minority _i × PostClosure _{ct} | 0.0191* (0.0098) | 0.0094 (0.0237) |
| State × Year FE | Y | Y |
| County controls | Y | Y |
| Borrower and loan controls | Y | Y |
| Adj.R-squared | 0.013 | 0.042 |
| Observations | 1,791,770 | 2,511,040 |

Notes: * p<.10; ** p<.05; *** p<.01. The dependent variable is the mortgage denial indicator, which equals 1 if the loan application is denied and 0 if the loan application is approved. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. Closure is a dummy equal to 1 for closure counties in the closure year, and 0 otherwise. PreClosure is a dummy equal to 1 for closure counties in the three years before the closure year, and 0 otherwise. PostClosure is a dummy equal to 1 for closure counties in the three years after the closure year, and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, loan amount decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, minority population share, and county-level averages of credit scores and loan-to-value ratios by the minority population. Standard errors in parentheses are clustered at the county level.

8 Conclusion

This paper examines the impact of local newspaper closures on racial and ethnic disparities in mortgage lending. Using a staggered difference-in-differences methodology, I find that the closure of local newspapers significantly widens the interest rate gap between minority (Black/Hispanic) and non-minority borrowers, with an increase of about 5.5 basis points. This effect is particularly pronounced for purchase mortgages, suggesting that purchase borrowers, especially first-time homebuyers who are typically inexperienced in the mortgage market, are disproportionately affected by the loss of local media scrutiny. The analysis also shows that traditional banks, which have historically faced greater scrutiny from local journalists, are more likely to engage in discriminatory lending practices than non-bank

and FinTech lenders.

The findings of my study have several important policy implications. First, they highlight the often-overlooked role of local newspapers in promoting fair and inclusive financial systems. The steady decline of local newspapers weakens an important channel of community oversight, potentially allowing lenders to engage in more discriminatory behaviour with less fear of reputational and legal consequences. To address this, policymakers should consider measures to support the local news industry, particularly in underserved areas where minority borrowers are more vulnerable. Some efforts to revive local journalism are already underway. For example, the 2021 Local Journalism Sustainability Act (LJSA) proposes tax credits for newspaper subscribers, payroll tax relief for news organisations, and incentives for businesses to advertise in local newspapers. At the state level, the Civic Information Consortium, introduced in New Jersey in 2018, aims to direct public funding to strengthen local news outlets. In another example, the Salt Lake Tribune in Utah became the first major US newspaper to convert to a nonprofit model in 2019 to take advantage of tax-exempt status and philanthropic support. Such a model is increasingly being used as a means of sustaining local journalism.

Second, it is equally important to recognise that the shift to digital news consumption is inevitable. As the news industry undergoes digital transformation, increased regulatory oversight of lending practices will be essential to compensate for the loss of traditional media's watchdog role. At the same time, improving the financial literacy of minority borrowers in regions where newspapers are closing can help further reduce the risk of discrimination.

Future research can expand the scope of this study to better understand the full impact of local newspaper closures on lending disparities. In particular, while my study focuses on GSE conforming fixed-rate mortgages, examining other mortgage products, such as FHA loans, subprime loans, and alternative credit markets, is critical to capturing the broader impact on lending discrimination. In addition, investigating the role of other news sources, such as social media platforms, could provide a more nuanced understanding of the changing landscape of local journalism and its impact on financial markets.

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Appendix A: Local news coverage of racial and ethnic discrimination in mortgage lending

Figure A1: Chicago Metro News (P.2, Iss.26, Vol.9, May 18, 1974)



Political Run Down

By Phil Smith

"A Slave By Any Other Name Is Still A Slave"

There are some strange things taking place in the Black communities of Chicago that could spell doom to the political hopes and aspirations of Black people. To the so-called revolutionary, this may be a welcomed sign in that the resultant unrest and general discontent will be so great that it might make for Black people taking to the streets to gain what the political process has denied them. Or it might mean that the general resistance to machine politics will now give way to the total resignation: "If you can't beat them, join them."

This unfortunate set of circumstances comes at a time when Black people have grown tired of the numerous promises made to them by the Daley "machine" and are aware of the refusal of Gov. Walker to accept their just demands. These set of circumstances under normal conditions would make political reform the order of the day, but like the tales of old, there are the Trojan Horses still evident in our communities who think nothing of delivering us over to a new white political enemy.

We find more and more Black leadership copping out and declaring themselves to be on the side of nothing. In fact, one of the strongest statements we have heard was made by a Black leader who said, "I will make a deal with the Devil if it means getting rid of Mayor Daley." We wonder when Black people will understand that Mayor Daley did not discover white people, rather white people discovered Mayor Daley. The system makes the Mayor Daley and Black people ought to stop looking for a "White Moses" to solve their problems.

A Black Moses tried to tell Black people in 1922 that only Black people could solve the problems that Black people have, but not enough of us were prepared to listen to Marcus Garvey. In fact, we did more to destroy the efforts he was making in our behalf than white folks who ended up bragging about how they used us to get rid of Garvey. Now we fight for a school to be named after him when we should have been fighting to keep him alive and well right here in this country, when that support was so necessary.

We did not support a Garvey, nor a Du Bois, nor a Paul Robeson, nor a Malcolm X, nor a Rev. Martin Luther King, Jr. We did not support them because our ties to the slavemaster have always been greater than our ties to freedom. It is just simply easier comfortable to go along with white folks and their white ideas than it is to keep your mind on freedom.

You can see the same old conspiracies developing in the Black communities. Their purposes are not to aid the causes of freedom and liberation, but to prevent Black people from, once and for all, destroying the stranglehold that white people have over politics in the City of Chicago. And we want to emphasize that we said white people, and not just the Daley machine white folks. We need to stop believing that if we replace one white person with another white person, everything is going to be all right for Black people.

Those Black people who are saying that the reason a Black candidate should not run for Mayor because there hasn't been adequate time to develop a proper campaign, are selling wolf tickets. What they really mean is that they are committed to supporting Bill Singer in the Democratic Primary and/or Jim Thompson the probable Republican candidate for mayor. This is the usual short-sightedness that keeps Black people from moving ahead politically.

There ain't no talk about Black people coming together to discuss what might be necessary if Mayor Daley can't run again. There has been the usual dissipation of the lips about what could happen if the political climate was right. Niggers in Chicago are sitting around worried about keeping their political patronage jobs within New Ark, New Jersey, is electing Ken Gibson for the second time, and Gary, Indiana, is getting ready to elect Dick Hatchler for a third time. Who said it was Nixon Time?

Black people in Chicago are slaves to convention. We are prepared to be a part of the revolution if somebody else is prepared to do the fighting. We have become scavengers instead of warriors, and our communities are in ruins because we are constantly looking for the "white knight" to ride through our Black neighborhoods and keep us from dealing with Black reality.

There are some Black people who will be embarrassed if a Black candidate is in the Democratic Primary for Mayor in 1975. They will be embarrassed because they know they are not in a position to support a Black candidate for mayor under any circumstances. There are many people who act like they are together and ready to move for freedom and equality, but they are not able to function because they are niggers who only respond to the orders of white people.

Will Bill Singer prove to be a more humane slavemaster than Mayor Daley? Did Dan Walker prove that he was not the run-of-the-mill politician by hiring two more Black people than did Dick Ogilvie? What the hell are Black people doing besides masturbating?

What is the difference between having George Washington or Simon Legros as your slavemaster if you are still a slave? Or what does it matter if you are the majority population in Chicago and you are still running around electing your slavemasters into office? Some niggers have developed a bull shit rationale for why they can't stand up and protect their communities, because they know we know they are afraid to challenge the white leadership syndrome.

You can't stand tall for Freedom if you are still on your knees. You have to stand up for what you believe in.

Mortgage Discrimination Against Racial Areas Challenged

In an action aimed at the nation-wide mortgage lending practice of "redlining" certain minority neighborhoods for discriminatory treatment, a suit was filed today against a Cincinnati, Ohio, lending and loan company charging rejection of a mortgage application because of the neighborhood's racial character. It was announced here by the National Committee Against Discrimination in Housing (NCDH) against the plaintiff.

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Republicans & Democrats Praised By Sullivan For Manpower Bill

Dr. Leon Sullivan, Chairman of the Board of OIC of America (Opportunities International Center), praised leaders of the Republican and Democratic party for their bipartisan support of OIC's new Manpower Bill.

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Westside Business Persons Honored

The third annual "Westside Business Persons of the Year" awards were presented recently at the Westside Branch of the Chicago Economic Development Corporation (CEDCO).

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Airway Chevrolet is one of four minority-owned automobile dealers in the Chicago area from which companies in the Peoples Gas System purchased fleet replacement vehicles valued at close to \$200,000.

EDA Approves Grant At Flora, Mississippi

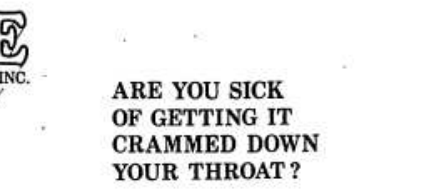
Approval of a \$316,000 grant to help create immediate construction jobs for the unemployed in Madison County, Mississippi, was announced recently by William W. Black, Jr., Assistant Secretary of Commerce for Economic Development.

The Mississippi Action for Community Education, Inc., 140 South Eighth Street, Greenville, applied for the grant for the Economic Development Administration, U.S. Department of Commerce.

James Rose Appointed Asst. Administrator For Crime Insurance

James M. Rose, Jr., of New York City was appointed Assistant Administrator for the Federal crime insurance program. Federal Insurance Administration, Department of Housing and Urban Development, on February 22, 1974.

Mr. Rose served as an Assistant U. S. Attorney in the Southern District of New York from March 1959 to June 1961. In both the civil and criminal divisions, in addition to trial and appellate matters in the U.S. District Court, he represented the United States in significant and complex appellate cases before the United States Court of Appeals for the Second Circuit. Prior to that, he was associated with the law firm of Dewey, Ballantine, Taub, & Wood of New York City.



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Figure A2: The Racine Courier (P.4, Iss.28, Vol.9, July 21, 1979)

THE RACINE COURIER Saturday, July 21, 1979 page 4

Viewpoints

EDITORIALS * OPINIONS * LETTERS * COMMENTS

TO BE EQUAL

By Vernon Jordan
EXECUTIVE DIRECTOR URBAN LEAGUE

Eleven years ago, Congress passed the Civil Rights Act of 1968, which included a section banning discrimination in the sale or rental of housing. That law has gathered plenty of dust in the intervening years. It did help end some discrimination in some places, but, overall, the housing market operates as if the law did not exist. Discrimination in housing remains firmly entrenched. A good part of the reason is that the law lacked adequate enforcement procedures. It left three routes open to those seeking to end housing discrimination.

First, people who had been discriminated against had the right to sue. That looks better than it plays. A private lawsuit is an expensive proposition, especially for the average person. It is time-consuming as well. So many people just could not protect their rights through that mechanism.

Beyond that, there is a failure of principle here. Why should victims of unconstitutional and illegal discrimination have to bear the costs and the burdens of going to court to defend rights the government is supposed to guarantee?

A second means of enforcement was authority for the Attorney General to bring suit against violators where there is a pattern of discrimination. This, too, is a faulty device. Housing discrimination cases never got more than token interest from the Justice Department.

Finally, the Secretary of Housing and Urban Development was empowered to resolve complaints of discrimination through conciliation and persuasion. That's hardly an enforcement mechanism—violators could always refuse to be persuaded.

Clearly, the law could not be enforced as it stands. President Carter acknowledged this earlier this year when he said: "Title VIII of the Civil Rights Act of

1968 ... remains largely an empty promise because of the lack of an adequate enforcement mechanism." To correct this, the Administration offered, and Congress is considering, amendments to the law which would finally put some teeth into it.

HUD would get greater powers. It would be able to take firm administrative action. After a fair hearing procedure, HUD would be able to order violators to comply with the law. The agency would be able to issue a temporary injunction preventing the sale or rental of the dwelling in question. And it could assess penalties.

The Justice Department would now have the right to intervene in private lawsuits and to initiate suits on the request of the Secretary of HUD. That would take some of the constraints off federal lawyers in enforcing the law.

The bill also would prohibit the practice of "redlining"—the cutting off of mortgage money to neighborhoods where minorities live. This long-standing practice needs to be attacked on a national basis, and the proposed bill would help end this tool of discrimination.

There's more to the bill, but all its provisions add up to finally putting some enforcement teeth in the fair housing law.

The aim is to end the dual market in housing that keeps blacks, other minorities, and women confined to a closed housing market. It constitutes a frontal attack on the persistent violation of federal law and constitutional rights.

Passage of the original fair housing law in 1968 sent discrimination underground—owners and realtors wanting to discriminate learned to do so by subtle means. Blacks seeking housing are often steered to black neighborhoods instead of integrated ones that may have better and

(Please turn to page 6)

The BLACKSIDE of Washington

By Sherman Briscoe
NNPA

Unemployed blacks—indeed all blacks in America—are caught in the trap of America's anomalous position of exporting jobs and importing peoples, intensifying the already serious unemployment problem of which mostly blacks are bearing its full brunt.

Recently, President Carter announced that he was doubling the monthly refugee quota of Southeast Asia from 7,800 to 14,800. Most of these are Vietnamese boat people trying to find their "friends" with whom they fought a senseless war. Except for Britain's Hong Kong, most other countries of Southeast Asia—Indonesia, Malaysia and Thailand, for example—are turning the refugees away. America's expanded refugee quotas are in addition to the normal annual immigration quota of 290,000.

That the U.S. is accepting more refugees shows a streak of decency of which we all can be proud. However, a puzzled look must appear on many black faces when they note that Haitian refugees are being put back on the boat and sent home.

We blacks, with twice the percentage of our people out of work as whites, plus 40 to 60 percent of young people jobless, are puzzled, too, by an American policy which permits our multi-national corporations to move so many jobs overseas where they manufacture everything from safety pins to TVs to automobiles, paying the natives of those countries 50 to 60 cents an hour and selling the products here at home for an inflated American price.

Ideally, there would be one world without political boundaries and quotas and passports and visas, and everyone would be free to settle wherever he could find a place. And work and live and share with everyone. No one should have to live on a boat, or go hungry, or be denied health services, clothing, shelter, education or employment.

All of this is very possible in our world and should be accomplished. But the millennium has not arrived. In the meantime, why should blacks bear so large a share of the burden?

Chilean Haecism
Congressman John Conyers

of Michigan is to be commended for his strong response to Chilean racism as expressed by the president of that country's supreme court, who has refused to extradite three Chilean secret police officials to the United States to stand trial for their part in the murder of Orland Letelier and his aide.

Chile's supreme court president Israel Borquez used an excuse (for not extraditing those charged) the racist claim that a fair trial had not been conducted because a black judge, the Honorable Barrington Parker, and a black jury had found the defendants guilty.

Chile, of course, is a racist country like Argentina, where the Europeans drove the Indians out. The country is 97 percent white.

Also, if those really responsible for Letelier's death were extradited, they would likely be much higher up—those who overthrew President Salvador Allende, including perhaps some members of the CIA who are said to have lent a helping hand.

The importance of children's play

by Verlee McKimley

"Every child has the right to full opportunity for play and recreation." — just as a reminder to those of you who are not aware that the year 1979 has been declared by the United Nations as the "International Year of The Child." Just what does this mean to each individual? It means that each adult parent non-parent should take an in-depth look at children's needs, and celebrate children and what they mean to the world.

To understand the im-

portance of play in a child's world we need to understand what young children are really like. Are they as easy to understand as aunts, uncles and grandparents say they are? Are they as complex as baffled parents claim (Please turn to page 5)

the Racine Courier

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Figure A3: The Kansas American (P.1, Iss.52, Vol.18, July 15, 1955)

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Race Bias In Banks

Federal Housing Administrator Albert M. Cole told the National Association of Mutual Savings Banks that the government would step in if more bankers did not start making home loans to Negroes on the "same terms as are available to others." He told them that banks had a public obligation to lend mortgage money to any applicant who could meet the requirements for a loan.

Unfortunately, all banks don't believe in this theory of community service and Negroes have had, and are still having a rough time getting credit on terms equal to those of other citizens.

This is a violation of basic rights and it hits Negro families in one of the weakest spots because housing needs are usually greater in Negro communities.

Informed Harlem leaders have always contended that Jim Crow lending practices by certain banks and insurance companies prevented the normal development of this community.

A few city and state officials have shown some interest in this complaint and several unofficial studies have been made so as to document and spell out the seriousness of this condition.

Several weeks ago, State Banking Commissioner George Mooney told a small group of Harlem businessmen and officials that his office had investigated charges of racial discrimination by local banks without finding any evidence to support such charges.

However, it appears that the full extent of Mr. Mooney's investigation amounted to a questionnaire or letter directed to the local banks regarding the policy used in making loans.

The Amsterdam News is vitally concerned about this entire situation because bank credit and the ability to get legitimate mortgage money are important life lines for this community.

Small business men need and must have bank credit and prospective home owners need and must have mortgage money if this community is to ever reach its full potential.

We believe sober minded bankers with good intentions should get together with sober minded community leaders of good intentions and try to find a final solution to this vexing problem.

It is a fact that Negroes find it harder to get funds to buy a house than other citizens in New York. It is a fact that more Negroes are better banking risks than they have ever been before.

Under the circumstances, we think the banks and the community would profit by more factual light and less rabble rousing noise on this important subject at this time.

SPEED KILLS---DRIVE CAREFULLY

RELIGION SURVEY

Find 96 Pct. Believe In God

NEW YORK —Religion in America was given a thorough going-over, with some interesting revelations. Among them:

1. Ninety-six per cent of Americans say they believe in God, but only 76 per cent in a life hereafter.
2. More than 70 per cent of American Negroes are church members, while about 60 per cent of whites belong to churches.
3. Couples who see eye-to-eye on religions matters have twice as good a chance statistically of a happy marriage as those that don't.
4. Episcopalians, Presbyterians and Jews have the biggest proportion of professional and white-collar members, while Roman Catholics, Lutherans and Baptists have the biggest share of manual laborers.

These are scattered tidbits from a volume, "A Guide to Religions of America," published by Simon and Schuster, Inc., and aimed at giving people a better understanding of each other's religious ideas and backgrounds.

Clergymen and church researchers of many denominations contributed to the study, which provides detailed data about the country's churches, and what they're doing.

It describes the history and creeds of the principal denominations, and in separate tables, contrasts their beliefs on such doctrines as the virgin birth, heaven and hell, the trinity and baptism.

Some of the findings:

1. Suicide rates are lowest among Jews, and somewhat higher among Protestants than Catholics.
2. Three of every 10 Catholics marry a non-Catholic, one of them without their church's approval.
3. Jews have the lowest divorce rate of any of the three major religious groups, while Protestants have the highest. The Catholic total is rising, largely in the desertion and non-support categories.
4. The churches now have 94,842,845 members, about 60 per cent of the total U.S. population. A hundred years ago only 16 per cent were church members.
5. American cities with the largest number of local churches are New York, with 3,273; Chicago, with 2,194; Los Angeles, with 1,700; Philadelphia, with 1,137; Detroit, with 1,069, and St. Louis, with 1,043. All the others have fewer than 625.
6. Among clergymen, 38 per cent believe the Bible is "wholly free from legend or myth," while among ministerial students, only 4 per cent hold this belief.

MINISTER HITS SEGREGATION

AU Medical Grads Hear Tolerance Plea

LITTLE ROCK, Ark. —An Arkansas minister charged Sunday that racial segregation is "morally and scientifically indefensible" and demanded "full and expeditious implementation of the Supreme court's decree ending the legal basis for segregation in public education."

The Rev. Colbert S. Cartwright, pastor of Pulaski Heights Christian church of Little Rock, made the demand at baccalaureate services at the University of Arkansas' school of medicine here.

He told the young physicians that, "as persons of influence in the communities to which you go, you have an inescapable obligation to lead others to judge the worth of persons not on the basis of race but of intrinsic worth."

Calling for "calm and reasoned leadership" in "these days of transition," Rev. Cartwright said, "there is no reason why in all good faith every community in our state cannot work out its problem of school integration without litigation or rancor."

He added:

"We must let no racial bigot, however pious, hoodwink us into the belief that the Bible supports segregation of races. There is no competent biblical scholar who finds such teaching in the Bible. The spirit of Jesus is quite to the contrary — emphasizing brotherhood and breaking down of partitions which separate human beings from one another. The whole thrust of studied world Christian opinion stands firmly against racial discrimination and segregation."

The minister asked the graduates to "openly and firmly" work for racial integration in the schools, adding, "let it not be said of you in regard to the challenge of racial justice that you are the 'silent generation.'"

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Appendix B: Additional Tables and Figures

Table B1: Summary statistics for the HMDA dataset, the Fannie Mae dataset, and the merged dataset.

| | (1) | (2) | (3) |
|--|-----------|-----------------|-----------------------------|
| | HMDA Data | Fannie Mae Data | HMDA-Fannie Mae Merged Data |
| Number of Fannie Mae securitised loans | 328,305 | 275,796 | 244,626 |
| Minority borrower | 0.13 | | 0.15 |
| Black borrower | 0.04 | | 0.04 |
| Hispanic borrower | 0.09 | | 0.11 |
| Loan interest rate (pps) | 3.50 | 3.50 | 3.50 |
| Credit score | | 752.88 | 757.20 |
| Loan-to-value ratio (%) | | 74.42 | 71.92 |
| Debt-to-income ratio (%) | | 34.84 | 34.84 |
| Loan amount (\$, thousands) | 292.77 | 293.68 | 300.95 |
| Income (\$, thousands) | 106.69 | | 106.46 |
| Points paid (%) | 0.18 | | 0.06 |
| Total loan costs (%) | 1.78 | | 1.61 |
| Coborrower presence | 0.44 | 0.46 | 0.42 |
| Refinance | 0.55 | 0.58 | 0.58 |
| Cash-out refinance | 0.21 | 0.24 | 0.20 |
| Delinquent period (months) | | 0.27 | 0.27 |

Notes: This table reports summary statistics for Fannie-Mae-securitised 30-year, fixed-rate, first-lien, owner-occupied, and single-family mortgage loans originated in 2018-2021 before and after matching HMDA data and Fannie Mae single-family loan performance data. The data are drawn from a 5% random sample of each HMDA and Fannie Mae dataset. Because the Fannie Mae data provide monthly reports on the status of each loan, I retain only one record for each loan, which is the most recently updated record, before the random sample is drawn (this does not change the information on loan, property, and borrower characteristics at origination, while still being able to incorporate the most recent information on the loan's performance, such as delinquency status). For each HMDA and Fannie Mae dataset, I retain only mortgages that are 30-year, fixed-rate (applied only to Fannie Mae data because it has this information), first-lien (applied only to HMDA data because it has this information), owner-occupied, and single-family. Mortgages with prepayment penalties and interest-only mortgages are also excluded from these two datasets. Column (1) presents summary statistics for approximately 329,000 mortgages securitised by Fannie Mae that are included in the 5% sample of HMDA data after applying the aforementioned filters. The number of loans covered by the 5% sample of Fannie Mae single-family performance data in column (2) (about 276,000 mortgages) is slightly lower than the number of loans reported in column (1) because, in addition to the initial filters, I also exclude from the Fannie Mae dataset Home Affordable Refinance Programme (HARP) mortgages, mortgages with original LTVs above 97%, and mortgages with a property zip code that has multiple county codes. I then match the two datasets on the exact year of origination, interest rate, loan amount, loan purpose, presence of a co-borrower, and county code of the property. Column (3) shows that around 250,000 loans were matched in this way, accounting for around 88.6% of the number of loans in column (2). In addition, the summary statistics of the merged dataset shown in column (3) are close to those of the HMDA and Fannie Mae datasets before merging, confirming the quality of the matching process.

Table B2: County summary statistics

| | Mean | SD | Min | Median | Max | N |
|-------------------------------|-------|-------|-------|--------|-------|-------|
| ln(Population) | 11.81 | 1.56 | 5.09 | 11.94 | 16.13 | 1,977 |
| ln(Population density) | 4.43 | 1.62 | -0.99 | 4.51 | 9.58 | 1,981 |
| ln(Per capita income) | 10.84 | 0.24 | 10.13 | 10.81 | 11.91 | 1,971 |
| Below poverty rate (%) | 13.36 | 4.87 | 3.20 | 12.90 | 35.30 | 1,983 |
| Unemployment rate (%) | 5.69 | 2.43 | 1.80 | 5.20 | 17.10 | 1,983 |
| Homeownership rate (%) | 69.79 | 8.50 | 33.26 | 70.67 | 88.01 | 1,983 |
| Minority population share (%) | 17.70 | 15.75 | 0.20 | 13.00 | 91.57 | 1,979 |

Notes: Data are from the US Census Bureau and FRED. Minority population means black and Hispanic population.

Table B3: Interest rate differentials

| | Dependent variable: Interest rate | | | |
|----------------------------|-----------------------------------|-----------------------|-----------------------|-----------------------|
| | (1) | (2) | (3) | (4) |
| Minority _i | 0.0784*** (0.0098) | 0.0711*** (0.0084) | 0.0423*** (0.0069) | 0.0405*** (0.0068) |
| State × Year FE | Y | Y | Y | Y |
| County controls | | Y | Y | Y |
| Borrower and loan controls | | | Y | Y |
| Lender × Year FE | | | | Y |
| Adj.R-squared | 0.970 | 0.971 | 0.975 | 0.975 |
| Observations | 244,626 | 242,852 | 232,910 | 232,910 |

Notes: * p<.10; ** p<.05; *** p<.01. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. Borrower and loan controls include borrower credit score, income decile dummies, LTV ratio, DTI ratio, loan amount decile dummies, total loan cost decile dummies, co-borrower dummy, and loan purpose dummies (purchase vs. refinance vs. cash-out refinance). County controls include the natural logarithm of population, the natural logarithm of population density, the natural logarithm of per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. Standard errors in parentheses are clustered at the state level for column (1) and at the county level for columns (2)–(4).

Table B4: Interest rate differentials - Robustness Checks

| | Dependent variable: Interest rate | | | | | | |
|--|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Minority _i | 0.0784*** (0.0098) | 0.0711*** (0.0084) | 0.0440*** (0.0053) | 0.0415*** (0.0048) | 0.0430*** (0.0046) | 0.0414*** (0.0044) | 0.0395*** (0.0039) |
| State × Year FE | Y | Y | Y | Y | Y | Y | Y |
| County controls | | Y | Y | Y | Y | Y | Y |
| Cash-out × Refinance × LLPA bucket × Year FE | | | Y | Y | Y | Y | Y |
| Amount decile × Year FE | | | | Y | Y | Y | Y |
| Cash-out × Income decile × Year FE | | | | | Y | Y | Y |
| Cost decile × Year FE | | | | | | Y | Y |
| Lender × Year FE | | | | | | | Y |
| Adj.R-squared | 0.970 | 0.971 | 0.977 | 0.978 | 0.978 | 0.978 | 0.979 |
| Observations | 244,626 | 242,852 | 242,852 | 242,852 | 242,852 | 232,913 | 232,913 |

Notes: * p<.10; ** p<.05; *** p<.01. The dependent variable is the mortgage interest rate in percentage points, adjusted for inflation. Minority is a dummy equal to 1 if the borrower is black or Hispanic and 0 otherwise. The Loan-Level Price Adjustment (LLPA) bucket dummies refer to 64 categories in an 8 × 8 matrix of LTVs and credit scores (i.e., the GSE grid) used by Fannie Mae to apply specific pricing adjustments based on different levels of risk (see Bartlett et al. (2022) for an example of the GSE grid). County controls include the county population, population density, per capita income, below poverty rate, unemployment rate, homeownership rate, and minority population share. Standard errors in parentheses are clustered at the state level for column (1) and at the county level for columns (2)–(7).

Table B5: Summary statistics – Closure counties vs. matched non-closure counties

| | Mean | SD | Min | Median | Max | N |
|--|-------|-------|-------|--------|-------|-----|
| Counties with newspaper closures | | | | | | |
| ln(Population) | 12.60 | 1.47 | 6.85 | 12.97 | 16.13 | 184 |
| ln(Population density) | 5.49 | 1.43 | 1.27 | 5.43 | 9.01 | 184 |
| ln(Per capita income) | 10.91 | 0.24 | 10.41 | 10.87 | 11.65 | 184 |
| Below poverty rate (%) | 13.05 | 4.50 | 5.40 | 12.50 | 24.30 | 184 |
| Unemployment rate (%) | 5.58 | 2.53 | 2.40 | 4.80 | 12.40 | 184 |
| Homeownership rate (%) | 66.52 | 8.44 | 47.50 | 65.97 | 85.97 | 184 |
| Minority population share (%) | 22.72 | 15.65 | 1.51 | 20.36 | 67.01 | 184 |
| Matched counties without newspaper closures | | | | | | |
| ln(Population) | 12.27 | 1.80 | 6.79 | 12.38 | 15.37 | 184 |
| ln(Population density) | 5.41 | 1.72 | 1.61 | 5.15 | 9.58 | 184 |
| ln(Per capita income) | 10.93 | 0.24 | 10.50 | 10.94 | 11.52 | 184 |
| Below poverty rate (%) | 13.09 | 4.71 | 5.70 | 12.90 | 23.30 | 184 |
| Unemployment rate (%) | 5.82 | 2.68 | 1.90 | 5.20 | 12.40 | 184 |
| Homeownership rate (%) | 68.41 | 10.86 | 33.64 | 70.01 | 86.27 | 184 |
| Minority population share (%) | 21.66 | 15.71 | 2.04 | 19.80 | 81.07 | 184 |

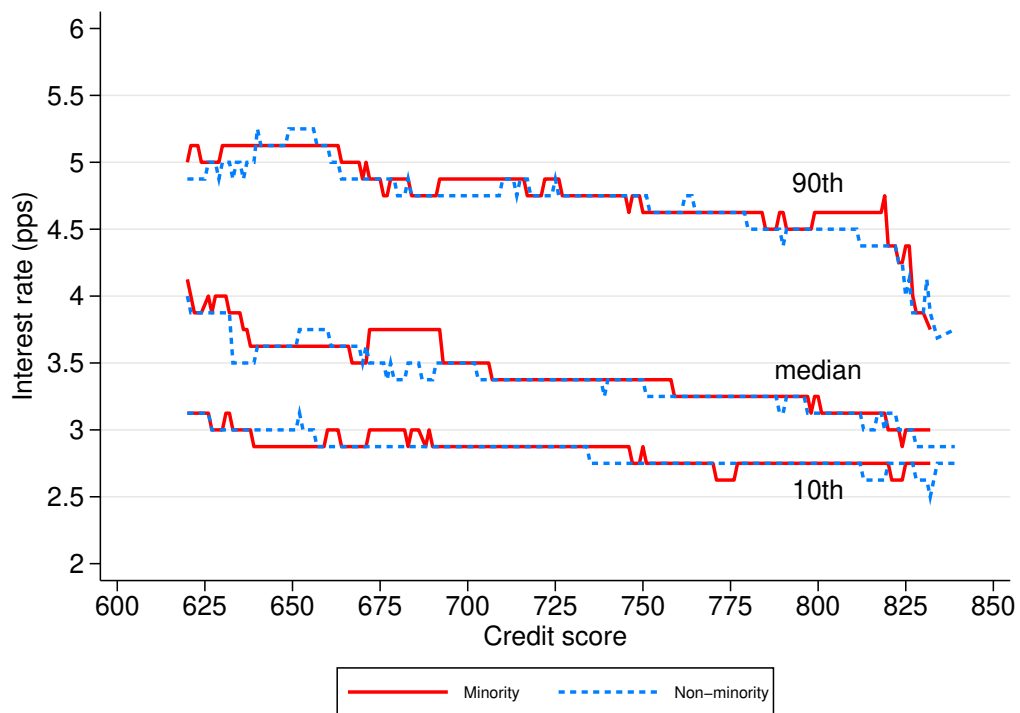
Notes: Data are from the US Census Bureau and FRED. Minority population means black and Hispanic population.

Table B6: Summary statistics – Mortgage applications 2018-2021

| | Mean | SD | Min | Median | Max | N |
|--|--------|--------|--------|--------|----------|-----------|
| Loan application summary statistics | | | | | | |
| Denial rate | 0.13 | 0.34 | 0.00 | 0.00 | 1.00 | 1,242,121 |
| Minority applicant | 0.18 | 0.38 | 0.00 | 0.00 | 1.00 | 1,242,121 |
| Black applicant | 0.06 | 0.24 | 0.00 | 0.00 | 1.00 | 1,242,121 |
| Hispanic applicant | 0.11 | 0.32 | 0.00 | 0.00 | 1.00 | 1,242,121 |
| Loan amount (\$, thousands) | 321.38 | 253.09 | 15.00 | 265.00 | 2,895.00 | 1,242,121 |
| Income (\$, thousands) | 123.35 | 125.62 | 0.00 | 94.00 | 1,880.00 | 1,242,121 |
| Coborrower presence | 0.45 | 0.50 | 0.00 | 0.00 | 1.00 | 1,242,121 |
| Refinance | 0.59 | 0.49 | 0.00 | 1.00 | 1.00 | 1,242,121 |
| Cash-out refinance | 0.22 | 0.41 | 0.00 | 0.00 | 1.00 | 1,242,121 |
| County summary statistics | | | | | | |
| Average credit score by minorities | 751.89 | 28.22 | 622.45 | 754.75 | 823.00 | 1,963 |
| Average LTV by minorities | 78.58 | 11.79 | 19.42 | 79.91 | 97.00 | 1,963 |
| ln(Population) | 11.82 | 1.56 | 5.09 | 11.95 | 16.13 | 1,963 |
| ln(Population density) | 4.42 | 1.62 | -0.99 | 4.50 | 9.58 | 1,963 |
| ln(Per capita income) | 10.84 | 0.24 | 10.13 | 10.81 | 11.91 | 1,963 |
| Below poverty rate (%) | 13.40 | 4.84 | 3.20 | 12.90 | 35.30 | 1,963 |
| Unemployment rate (%) | 5.69 | 2.44 | 1.80 | 5.20 | 17.10 | 1,963 |
| Homeownership rate (%) | 69.81 | 8.52 | 33.26 | 70.72 | 88.01 | 1,963 |
| Minority population share (%) | 17.78 | 15.44 | 0.46 | 13.22 | 92.22 | 1,959 |

Notes: Loan-level data are mortgage applications obtained from a 5% random sample of HMDA data from 2018 to 2021. County-level data are from the US Census Bureau and FRED. Exceptions are county-level average credit score and average LTV by minorities, which are calculated from the merged HMDA and Fannie Mae loan performance data. Minority population means black and Hispanic population.

Figure B1: Interest rate distribution by credit score and minority status



Notes: This figure plots the quantile distribution of interest rates (winsorised at the 1st and 99th percentiles) by credit score and minority status for 30-year single-family conforming fixed-rate mortgages securitised by Fannie Mae.

IMPRESSUM

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