The Social Externalities of Bank Disclosure Regulation: Evidence from the Community Reinvestment Act *

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Abstract

We investigate the impact of bank disclosure regulations on local business activities by exploiting the 2005 Community Reinvestment Act (CRA) reform, which exempted a group of banks from federal mandatory disclosure requirements for geographic loan distribution. We find that low and moderate income (LMI)- neighborhoods experience a significant decline in small business growth, small business employment, and wages following the disclosure reform. The negative impact on small businesses is particularly pronounced in LMI areas with a high proportion of racial minority population. Using hand-collected data, we also document that non-disclosing banks indeed reduce lending to LMI areas after the reform, consistent with our results being driven by the bank credit channel. Together, our findings suggest that the disclosure elimination causes negative externalities on marginalized communities that the CRA specifically targets to protect. Overall, our findings highlight the effectiveness of mandatory disclosures as a policy tool in incentivizing banks' social behavior.

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1 Introduction

In recent years, disclosure has become an increasingly common tool for encouraging firms' socially desirable actions. Regulatory agencies have used disclosure as a policy tool for improving social welfare across areas including workplace safety and health, climate change, and consumer protection. Prior studies have found evidence that policies which employ mandated disclosures incentivize firms to comply with regulatory standards, and improve targeted behavior (Chen et al., 2018; Christensen et al., 2017; Dou and Roh, 2019; Johnson, 2020; Tomar, 2021).[1]

Among banking regulatory agencies, banks' social performance in equitable treatment of customers has been a matter of particular concern. Several laws prohibit lenders from discriminating consumers based on race, color, area income, gender and other characteristics unrelated to credit worthiness. These laws are enforced by the Department of Justice (DOJ) which brings lenders in violation of discrimination laws into civil court actions, and by banking regulatory agencies which conduct periodic examinations of banks.[2] Additionally, these enforcement efforts have been traditionally complemented with disclosure requirements for institutions involved.[3] These disclosures are intended to serve as a disciplinary mechanism

[1] A large body of prior studies have examined various settings to investigate the effects of mandatory disclosures. By exploiting the 2008 CSR disclosure mandate in China, Chen et al. (2018) find that mandatory CSR reporting decreases firms' profitability. Christensen et al. (2017) find that mine-relevant citations, injuries, and labor productivity decrease after the mandatory inclusion of mine-safety issues in firms' financial reporting. Dou and Roh (2019) study the effects of the Consumer Financial Protection Bureau's public disclosure of consumer complaints in mortgage markets and find that such public release of complaints database leads to a decrease in mortgage applications for banks with higher number of complaints. Johnson (2020) studies the Occupational Safety and Health Administration (OSHA) and finds that publicizing workplace safety violations leads to significant improvement in workplace safety and health. Tomar (2021) investigates the mandatory disclosure of greenhouse gas reporting and finds that the disclosure leads to emissions reductions.

[2] These include the Fair Housing Act (FHAct) of 1968 which prohibits discriminatory housing practices in the real estate industry, and the Equal Credit Opportunity Act (ECOA) of 1974, which prohibits lending discrimination in all personal and commercial credit transactions.

[3] For example, the Home Mortgage Disclosure Act (HMDA) of 1975 requires banks to report data on loan-level mortgages. These data are frequently used in investigations and in studies to identify lending patterns that could be discriminatory. The Community Revinvestment Act (CRA) of 1977 requires banking regulators to consider a bank's performance in meeting the needs of its community when it applies for permission to expand. In addition to regulatory agencies' periodic examinations, the CRA requires banks to disclose detailed information on community development, small business, and small farm loans.

in that they enable the public to use the disclosed data to assess and monitor the activities of lenders in their neighborhoods. The recognition of public disclosure as a policy tool is also echoed in a recent proposal issued by the Consumer Financial Protection Bureau to require financial institutions to disclose detailed data on small business loans by race, sex, and ethnicity of the borrowers.[4]

In this study, we examine the impact of a bank disclosure rule change that exempted a group of banks from federal mandatory disclosure requirements for geographic loan distribution on local business activity. We find that low- and moderate- income (LMI) zip codes experienced a significant decline in small business growth following the disclosure elimination. As a result, employment share attributable to small businesses and wages were negatively impacted in these areas. We also document that the most affected areas were LMI areas with a high proportion of racial minority population. Overall, these results show that the aggregate effects of the disclosure elimination manifested in marginalized communities that the Community Reinvestment Act (CRA) specifically targets to protect.

The CRA of 1977, which aims to incentivize bank lending to underserved communities, requires banks to disclose the number and amount of small business loans to low-, moderate-, middle-, and upper-income areas (hereafter, "geographic disclosure"). These disclosures provide the public, particularly community organizations, with data to assess and monitor the activities of lenders in their neighborhoods (Federal Reserve Board, 2005a,b). We focus on the CRA setting for two reasons. First, a reform to the CRA implemented in 2005 provides an empirically useful setting to examine the impact of disclosure. While the CRA encourages bank compliance through two primary channels - (i) periodic examinations and (ii) public disclosures of detailed lending activities, - the 2005 reform resulted in a structural change to the disclosure channel only, which allows us to more robustly attribute our findings to the change in disclosure rules. Second, policies implemented under the CRA directly impact underserved populations, who are known to receive unequal treatment by banking

[4]See https://files.consumerfinance.gov/f/documents/cfpb_section-1071_nprm_2021-09.pdf

institutions (e.g. Munnell et al., 1996; Blanchflower et al., 2003; Agarwal et al., 2012; Begley and Purnanandam, 2021). Moreover, due to severe information asymmetry, individuals and small business owners in these neighborhoods lack readily available substitutes for bank loans, making them particularly vulnerable to negative shocks in bank credit (e.g. Khwaja and Mian, 2008; Chodorow-Reich, 2014; Nguyen, 2019). Therefore, changes in CRA policies may adversely affect marginalized population, which the CRA regulation targets.

The reform in 2005 triggered a change in the asset-size threshold, exempting a group of banks from mandatory reporting and disclosure requirements. Under the CRA, institutions categorized as "large" are required to disclose the geographic location of small business loans in their annual CRA reports. The 2005 reform increased this asset-size threshold from $250 million to $1 billion. As a result, banks with assets between $250 million and $1 billion are newly defined as "intermediate small banks," and are thus exempt from mandatory CRA reporting. Community organizations almost universally opposed the proposal, expressing concerns that the increased threshold would "cause banks to reduce their investments and services in low- and moderate- income areas" (Federal Reserve Board, 2005a,b). Most banks, on the other hand, supported the proposal, as it promised to reduce data collection and reporting costs for small institutions.[5]

We predict that the elimination of mandated disclosure of geographic loan distribution may negatively impact local communities, especially those in CRA target areas (i.e., LMI neighborhoods), as disclosure exempt banks switch their lending activities from these areas to more profitable affluent areas. Banks can recalibrate their lending portfolios more easily after the reform as the elimination of the disclosure mandate decreases public monitoring. While community organizations may still try to deduce lending practices of local banks

[5]Since 2005, the asset threshold has been annually adjusted based on changes in the Consumer Price Index. The small bank threshold has increased from $1 billion in 2005 to $1.322 billion in 2021, with the average increase per year of $0.022 billion. We focus on the 2005 reform as it resulted in the largest change in the threshold, allowing for an examination of a sizable sample of banks that became exempt after the regulation. Community organizations have expressed concerns that the continued annual adjustment might further increase the number of banks exempt from the large bank evaluation standards and reduce the availability of small business loan data (Federal Reserve Board, 2005b). For the full list of annual asset-size threshold adjustments, see: https://www.ffiec.gov/cra/pdf/2021_Asset_Size_Threshold.pdf

across different geographic areas, these efforts are likely to be more costly and less effective compared with the pre-reform regime, as information provided by banks in regulatory reports contain total amount of small business loans without detailed breakdown of this information across income geographies.

To investigate the impact of the geographic loan distribution disclosure exemption on local business activity we use identifying variations along three important dimensions. First, we use variation in the reduction in zip code-level disclosure intensity, which allows us to compare outcomes between zip codes which experienced a large reduction in aggregate disclosure versus those that did not. Second, we use variation in the CRA target eligibility status (i.e., LMI status) which provides banks with strong incentives to comply with the goals of the CRA, as banks' lending to these areas are weighted heavily in CRA evaluations (Agarwal et al., 2012; Ding et al., 2018; Saadi, 2020; Begley and Purnanandam, 2021). Therefore, we expect any CRA policy driven effects, if there are any, to be more pronounced in CRA target areas. Third, we specifically focus on small businesses as the reform affected disclosure requirements for loans extended to small businesses, but not for other types of commercial loans. Moreover, we examine heterogeneity in effects across firm size categories. Evidence of stronger effects in smaller firm size categories will be consistent with the effects taking place through a banking channel as information frictions, and thus reliance on bank credit are higher for smaller firms. In summary, our analyses compare within-zip code changes in small business activity pre- and post- the reform between high- versus low- disclosure reduction zip codes, for CRA target versus non-target areas.

We start by identifying intermediate small banks newly exempted from disclosure by the 2005 reform, and the geographic areas of their operations during the six-year period surrounding this change (2002-2007). We use the Census Zip Business Pattern data to construct our primary measures of local business activity. We find that LMI zip codes, which CRA specifically targets, experience a significant incremental decrease in business activity when the majority of newly disclosure-exempt banks in that zip code area switch to non-

disclosure ("reduced disclosure zip codes"). Specifically, we find that these reduced disclosure zip codes in CRA target areas are associated with a 2 percent decrease in the total number of establishments in the post-reform period. Importantly, examining by firm size category, we find that this negative impact is primarily driven by a decline of 1.8 percent in businesses in the smallest size category — establishments with 1 to 9 employees. For an average zip code with 153 small establishments with 1 to 9 employees, this is a decrease of 3 establishments post-reform. In our subsequent analysis, we find that the areas with particularly large impacts are LMI areas where residents are predominantly minority - reduced disclosure zip codes are associated with a 2.1 percent decrease.

We conduct several analyses to shed light on the channel through which reduced disclosure impacts local business activity. Prior literature documents that the public disclosure of information has a disciplinary effect on firms by making the undesirable behavior costly (Miller, 2006; Dyck et al., 2008; Christensen et al., 2020; Johnson, 2020). Further, community advocacy groups have claimed that the disclosure of detailed loan information by demographic attributes encourages banks' pro-social behavior through "public shaming" of discriminatory lending practices (Federal Reserve Board, 2005a,b; Berry, 2021). Our cross-sectional analyses show that the share of racial minority population, the strength of community organizations' scrutiny, and bank competition in the local geographical market moderate the relation. These findings imply the effects are stronger in areas where banks likely incurred higher costs from CRA disclosure during the previous mandatory disclosure regime.

Next, we perform several additional analyses and robustness tests. First, we examine the consequences of our findings in the labor market. We document that reduced disclosure zip codes in CRA target regions were associated with a 1.2 percent incremental decline in employment share that is attributable to small businesses, and a 1.5 percent incremental decline in average wages. Second, we alternately measure local entrepreneurial activities using the Startup Cartography Project's new business registrants data. We show that there is a 3 percent decline in new firm formation in CRA target areas with a large reduction

in disclosure. Lastly, an alternative explanation to our findings is that our results may be driven by differences in observable and unobservable attributes between reduced disclosure zip codes and non-reduced disclosure zip codes, rather than the reduction in disclosure itself. To alleviate this concern, we use entropy-balanced samples and find that our findings are robust to using this specification.

The results thus far do not provide direct evidence on whether the decline in small business activity in reduced disclosure zip codes is attributable to the reduction in bank credit in these areas. The lack of publicly available data poses an empirical challenge as non-disclosing banks stop disclosing CRA data on small business loans after the reform. To corroborate our main findings with additional evidence on this lending channel, we examine non-disclosing banks' post-2005 lending activities in CRA target areas, using ex-post released information obtained from banks' CRA performance examination reports. Following each periodic CRA examination, a performance evaluation report ("PE report") is publicly released with a lag. PE reports contain information on the bank's CRA performance during a specified evaluation period, including the CRA rating as well as detailed data and analyses supporting the rating. Importantly, the review cycle for the periodic CRA examination is 2 years for large banks and 5 years for smaller banks; thus, the information contained in PE reports is not available to the public for at least 2 years.

For a subsample of banks that received a performance evaluation during the post-reform sample period, we manually read each of their PE reports and collect information on the distribution of small business loans across the four income geographies within each bank's assessment area. Using within-bank variation, we find that non-disclosers significantly reduce small business loans to CRA target areas during the non-disclosure period. Additionally, we provide some descriptive evidence on other community activities of non-disclosers versus disclosers during the post-reform period. We do not find significant differences between the two groups in terms of community development loans, community investments, or donations in their assessment areas. While descriptive, this suggests that the differences in other

community activities are not likely to be the primary driver of the reduction of business activity in reduced disclosure zip codes.

Our paper contributes to several literatures. First, our paper contributes to the literature examining the spillover effects of disclosure regulation on economy. The literature on the real effects of firm disclosure has typically examined how disclosure regulation affects firm behavior. For example, Dou and Zou (2018) examine the impact of geographic loan distribution disclosure regulation on loan quality at the bank level using the 2005 CRA reform and find that newly exempt banks that stop disclosing geographic loan distribution information experience an increase in the quality of commercial loans and profitability. However, there is limited evidence on how disclosure regulation affects local economy and community welfare (e.g., employment) especially in low and moderate income neighborhoods.[6] Leuz and Wysocki (2016) suggest that macroeconomic studies quantifying the magnitude of aggregate effects are important for a welfare analysis of disclosure regulation even if firm-level real effects studies might suggest the possibility of aggregate effects. We provide some evidence to address the conclusion in Leuz and Wysocki (2016) that "we generally lack evidence on market-wide effects and externalities from regulation, yet such evidence is central to the economic justification of regulation" and respond to the call for more research on macroeconomic outcomes of disclosure regulation. Our findings are unlikely to be inferred from Dou and Zou (2018) because the U.S. banking system is fragmented with many small local banks. In 2005, there were 7,467 commercial banks with 76,106 total branches.[7] Therefore, it is not clear that 2005 CRA reform which only affected intermediate small banks was material enough to impact local economies.

Second, increasing attention has been given to non-traditional disclosure settings as a

[6]Granja (2018) finds that the adoption of disclosure and supervisory regulation across U.S. states in the late 19th century increases stability and development of commercial banks. Our study focuses on the macroeconomic effects of disclosure regulation in banking industry with a particular focus on low and moderate income neighborhoods.

[7]See https://banks.data.fdic.gov/explore/historical?displayFields=STNAME%2CTOTAL%2CBRANCHES%2CNew_Char&selectedEndDate=2021&selectedReport=CBS&selectedStartDate=1934&selectedStates=0&sortField=YEAR&sortOrder=desc

way to understand whether disclosure mandates affect firm behavior (Leuz and Wysocki, 2016; Dranove and Jin, 2010). Despite banks' importance in the economy, there is relatively little evidence on whether mandated disclosures—particularly those designed for financial institutions—achieve the desired real effects. While prior studies examining bank disclosure largely focus on the effects of the quality of financial reporting on banks' economic behavior (Beatty and Liao, 2014) and financial stability (Acharya and Ryan, 2016), we know relatively little about banks' reporting of non-financial information. Our study contributes to this literature by examining whether and to what extent mandated disclosures of non-financial information can achieve their intended real effects in the setting of bank disclosures.

Third, we also contribute to the extensive body of literature which examines the impact of the CRA. Studies in this literature have focused on the effectiveness of, and banks' incentives to comply with CRA standards, yielding mixed empirical evidence. Dahl et al. (2000) examine whether CRA rating downgrades affect mortgage lending behavior and do not find evidence that banks increase mortgages to low-income areas after experiencing a downgrade. Bhutta (2011) shows that, while the CRA has little impact on average, it has an impact in large metropolitan areas. Agarwal et al. (2012) examine banks' lending behavior around CRA examinations, finding increased lending around the examinations and that the loans made during these periods are significantly riskier. They conclude that the CRA has a meaningful impact on banks' lending behavior. Using the changes in CRA eligibility status caused by redefined statistical areas, Ding et al. (2018) show that areas that lost their low-and moderate-income status experience decreases in small business loans. Saadi (2020) finds that mortgage supply was higher in CRA-eligible census tracts during the boom period, resulting in a more severe housing bust in these areas. While these studies focus on the structural discontinuities in CRA regimes and examinations, our paper specifically focuses on the CRA's disclosure requirements to shed light on the impact of disclosure when used as a policy tool.

Lastly, our findings have implications for regulatory agencies. The CRA has traditionally

relied on examinations and penalties to enforce banks' compliance with the larger goal of fulfilling the credit needs of lower-income communities. Our evidence suggests that disclosure may be a compelling complement to examinations as a policy tool. Our paper provides evidence that is relevant for the recent proposal by the CFPB to require financial institutions to collect and report data small business loans applications by gender, race, and ethnicity.

The rest of the paper is organized as follows. In Section 2, we provide institutional background on the Community Reinvestment Act and its disclosure requirements, as well as our predictions. In Section 3, we discuss our data and sample construction. Section 4 describes the research design and Section 5 presents results. We conclude in Section 6.

2 Background

2.1 The Community Reinvestment Act (CRA)

The Community Reinvestment Act (CRA; P.L. 95-128, 12 U.S.C. §§2901-2908) was enacted in 1977 to fulfill the credit needs of individuals and businesses in low- and moderate-income (LMI) and minority neighborhoods. The CRA was originally conceived as a congressional response to the problem of "redlining"—a discriminatory practice used by banks, in which metropolitan geographic zones were outlined in red to indicate to lending officers that no loans should be made in those regions. These redlined areas were disproportionately located in minority and lower-income neighborhoods.[8] Critics argued that redlining resulted in limited credit availability, causing economic deterioration in lower-income and predominately non-white areas. The CRA was therefore passed to encourage banks to lend to low- and moderate-income neighborhoods within their assessment areas.

In its earliest form, the CRA did not delineate specific guidelines for implementation other than the directive that regulating agencies should "encourage" banks to meet the credit needs

[8] A number of empirical studies published around the time of the CRA's passage confirmed the presence of redlining in various communities (Benston and Horsky, 1991).

of the communities in which they operate (Overby, 1995).[9] In 1995, in response to criticism of the ambiguity of this policy guidance and the inconsistent application of evaluation standards, the regulatory agencies responsible for oversight issued a comprehensively revised set of rules.

These new rules replaced the process-based performance evaluation standards with more results-based procedures (Overby, 1995). Specifically, three tests were introduced: a lending test, an investment test, and a service test. In order to enforce compliance, the regulators periodically conduct onsite examinations of each bank and conducted these tests. The lending test considers the quantity and quality of lending—such as mortgage loans, small business loans, small farm loans, and consumer loans—as well as its distribution across geographic areas and income groups. In particular, the regulators examine the dispersion of lending across low-, moderate-, middle- and upper-income areas, respectively. Second, the investment test assesses whether a bank provides a qualified amount of investment for neighboring areas. Last, the service test evaluates the scope of a bank's retail banking system as related to community development services. After these tests, the regulators write an evaluation of the banks' compliance and provide a CRA rating.[10] Banks consider this rating important because it is taken into consideration when they apply to merge or acquire another depository institution or expand by opening a branch. Failure to meet the CRA requirements can result in a delay or denial of a bank's application for new business opportunities.

Another significant change, more relevant to our study, was the requirement for mandatory collection, reporting, and disclosure of data on small business loans. Under the new guidelines, large banks were required to collect and report the number and the amount of small business loans, aggregated for each census tract area in which the bank made at least

[9]The four federal banking regulators – The Board of Governors of the Federal Reserve System (FRB), the Federal Deposit Insurance Corporation (FDIC), the Office of Thrift Supervision (OTS), and the Office of the Comptroller of the Currency (OCC) – work jointly through an umbrella organization, Federal Financial Institutions Examination Council (FFIEC) to implement and enforce banks' compliance with the regulation.

[10]The CRA assessment areas are generally the areas in which an institution operates its branches and deposit-taking ATMs and any surrounding areas in which it originates or purchases a substantial portion of bank loans. The regulators offer a rating out of four criteria: outstanding, satisfactory, needs to improve, or substantial noncompliance.

one small business loan. For this purpose, small business loans are defined as loans smaller than $1 million. The agencies then prepare annual Disclosure Statements, which they make available to the public. The Disclosure Statements contain information on the number and the amount of small business loans located in low-, moderate-, middle-, and upper-income census tracts.

2.2 The 2005 reform and asset-size threshold adjustments

Before 2005, banks with assets of more than $250 million were defined as "large banks" and were required to report distribution of small business loans by geography. These geographic loan disclosures demonstrate loan originations by four median income levels: (a) low, (b) moderate, (c) middle, and (d) upper-income groups. These breakdowns are based on the census tract median family income relative to the MSA/MA median family income. Appendix A provides an excerpt of Cashmere Valley Bank's disclosure of geographic loan distribution in 2005. It demonstrates loan originations by four median income groups at the county level and provides information on regulators' assessment areas and regulating agencies.

Prior to the recent reform, banks often claimed that the CRA disclosures were unduly costly, especially for smaller banks. In 2005, to reduce the data collection and reporting burden on small institutions, regulators raised the threshold definition for a "large bank" to one having assets of more than $1 billion (Federal Reserve Board, 2005a,b; Federal Financial Institutions Examination Council, 2013).[11] Consequently, banks with total assets between $250 million and $1 billion were newly defined as "intermediate small banks" and allowed to opt in or out of disclosure requirements.

[11]The modification also provides that the asset threshold be annually adjusted for inflation, based on changes in the Consumer Price Index.

2.3 Prediction

The reduction in disclosures of geographic loan distribution has the potential to impact banks' lending behavior and local business activities. Specifically, non-disclosers likely face less public shaming or reputational costs because community organizations lack the means to assess and evaluate their small business lending activity. Local community groups regularly retrieve CRA reports to monitor banks' performance in meeting local credit needs and use the information to pressure banks to improve services to the community (Fishbein, 1992; Zinman, 2002; Apgar and Duda, 2003). Prior studies provide anecdotal and empirical evidence that public shaming can pressure firms to behave in ways that are socially desirable through various means such as media outlets and NGO campaigns (Miller, 2006; Dyck et al., 2008; Christensen et al., 2020; Johnson, 2020). The elimination of disclosure requirements may strengthen banks' incentives to pursue more profitable opportunities that maximize shareholder value as opposed to more socially desirable goals (e.g., meeting the credit needs of low-income areas). Dou and Zou (2018) document evidence that non-disclosers' profitability increases after the exemption, consistent with the idea that the lack of disclosure incentivizes non-disclosing banks to make more value-increasing lending choices.[12]

Collectively, we predict that the relaxation of the disclosure mandate will decrease exempt banks' incentives to lend in CRA target areas, which consist of low- and moderate income neighborhoods, and thus will negatively impact local economies in these areas. There are at least three reasons why we may not find a significant negative effect of the 2005 CRA reform on local economies. First, intermediate small banks may continue their usual lending practices. This could especially be the case for regional banks with a small number of

[12]The lack of disclosure by non-disclosing banks can also impact the lending behavior of nearby banks that do disclose loan distribution by reducing the relevance of aggregate information. The Federal Financial Institutions Examination Council (FFIEC) not only produces disclosure statements at the institution level, but it also produces aggregate disclosure statements which indicate, for each given geography, the number and amount of small business loans originated by all reporting institutions. The aggregate reports are used by community organizations to compare a bank's performance against peer banks in the area, as well as by the regulatory agencies as a benchmark for a bank's performance in periodic examinations. After 2005, aggregate reports now include the lending activities of only disclosing banks (i.e., large banks and intermediate small banks that voluntarily disclose), potentially reducing the informativeness of the aggregate data.

branches which are established to cater to the needs of local communities. These regional banks may not dramatically change their business model due to a bank disclosure rule change. Second, regulatory monitoring through periodic CRA examinations may ensure that banks continue to meet the credit needs in CRA target areas. Third, the U.S. banking system is fragmented with many small local banks. While some of these banks can change their lending practices, there may not be a significant effect in local economies due to the availability of other banks and lending channels.

3 Sample and Data

We first identify intermediate small banks that are exempt from geographic loan distribution reporting using total assets (Call Report item rcfd2170). The FFIEC classifies a financial institution as an intermediate small bank if the bank had total assets of at least $250 million as of December 31 for both of the prior two years (i.e., 2003 and 2004) and less than $1 billion as of December 31 for either of the prior two calendar years. We identify 1,091 intermediate small banks. Based on this sample of banks, we construct a constant panel dataset for the six-year period surrounding the enactment of the CRA reform in 2005 (i.e., 2002-2004 and 2005-2007).[13] We restrict our sample period to this window to limit the effects of the 2007-2008 financial crisis, which may have had a differential impact on small business activity across income-level geographies (Ryan, 2008, 2017).

Next, we identify non-disclosers (versus disclosers) using the FFIEC CRA disclosure reports. The FFIEC produces and publicly discloses an annual Disclosure Statement for institutions that collected and reported CRA data to the agencies. Table 1 shows that 595 (55%) banks that disclosed CRA reports before the reform stopped disclosing afterwards, while 496 (45%) continued disclosing.

We obtain data on small business activities from the Census Zip Codes Business Patterns (ZBP) dataset. This dataset provides information on the number of establishments

[13] We also conduct all of our analyses excluding year 2005 and confirm that our inferences remain the same.

categorized by the number of employees. For this study, we mainly focus on businesses with less than 500 employees to investigate the economic effects on local small businesses.[14] We also use the new business registrant data developed by the Startup Cartography Project as an alternative measure of small businesses. Utilizing this new dataset, we further explore the effects on small business formation (i.e., new firm creation) in the local economy. This dataset offers new insights into entrepreneurial environments by incorporating various types of business structures including partnerships, LLCs, and corporations.

Data on geographic population, income, and percentage of population below the poverty line are retrieved from the FFIEC Online Census Data System. This data system incorporates the Census data summary of demographic, income, population, and housing at the Census tract level. We match our tract-level bank operations data to each zip code using the USPS Zip Code Crosswalk File. Data on large banks' small business lending is from the FFIEC, and the county-level GDP growth rate is from the Bureau of Economic Analysis.

To provide insights into the post-2005 lending activities of non-disclosing banks, we collect information on the geographic distribution of small business loans for a subsample of banks that received a CRA performance evaluation (hereafter, the "PE report sample"). Large banks undergo a CRA exam every two years, and small banks every five years. Following a CRA exam, a performance evaluation report ("PE report") is produced and released. PE reports contain information on the bank's CRA performance during a specified evaluation period, including its CRA rating and detailed data and analyses supporting the rating. We manually review each of the PE reports released between 2006 and 2009 and collect the following information: (1) the distribution of small business loans across the four income geographies within each bank's assessment area, (2) the total number of small business loans extended to each assessment area (or the total number of the sample small business loans reviewed in each assessment area), and (3) the counties included in each assessment area. PE reports are obtained from the FDIC, FRB, and OCC/OTS.

[14]The U.S. Small Business Administration defines a small business for the manufacturing industry as a company with fewer than 500 employees (U.S. Small Business Administration 2019).

4 Empirical Design

4.1 Non-disclosure and small business activities in CRA target neighborhoods

We examine the changes in local business activities around the CRA disclosure exemption. To attribute our findings to the non-disclosure of CRA geographic loan distribution information, we use identifying variations along three important dimensions. First, we use variation in the reduction in zip code-level disclosure intensity, which allows us to compare outcomes between zip codes which experienced a large reduction in aggregate disclosure versus those that did not. Second, the CRA target eligibility status (i.e., LMI status) provide banks with strong incentives to comply with the goals of CRA, as banks' lending to these areas are weighted heavily in CRA evaluations.[15] Therefore, if any differences in outcomes we observe are driven by CRA policies, we expect them to be more pronounced in CRA target areas. The regulatory classification of an area as LMI depends on the area's *relative* income to the MSA - that is, two areas with the same income levels do not necessarily have the same LMI status. Following this methodology, we attempt to compare outcomes between zip code areas that are very similar in terms of the income level but that only differ in the geographic designation under the CRA regulation. Third, we specifically focus on small businesses as the reform affected disclosure requirements for loans extended to small businesses, but not for other types of commercial loans. Moreover, our dataset allows us to examine heterogeneity in effects across size categories even among small businesses. Evidence of stronger reaction in smaller firm size categories will be consistent with the effects taking place through a banking channel as information frictions, and thus reliance on bank credit are higher for smaller firms. In summary, our analysis compares within-zip code changes in small business

[15]Prior studies including Agarwal et al. (2012), Ding et al. (2018), Saadi (2020), and Begley and Purnanandam (2021) show that the CRA target eligibility status provides banks with strong incentives to lend to low- and moderate- income areas.

activities pre- and post- reform between high- versus low- disclosure reduction zip codes, for CRA target versus non-target areas.

CRA target areas are designated at the tract level. However, because our small business establishment data are available at the zip code level that is the most granular level publicly available by the ZBP dataset, we link our tract-level geographic characteristics data to the zip code-level data using the HUD-USPS Zip Crosswalk Files. Following the FFIEC's classification scheme, we sort each zip code into one of four income groups (i.e., low, moderate, middle, and upper) based on the zip code's median family income relative to the MSA/MD median family income.[16] Specifically, we classify a zip code as low-income if its median family income is less than 50 percent; moderate-income if the median family income is more than or equal to 50 percent but less than 80 percent; middle-income if the median family income is more than or equal to 80 percent but less than 120 percent; and upper-income if the median family income is greater than or equal to 120 percent relative to the MSA/MD median family income. Then, we classify low and moderate-income zip codes as target areas following the CRA rule. On the other hand, middle and high-income zip codes are considered as non-target areas.

We use a triple difference-in-differences approach with zip code and year-fixed effects and

[16] According to the US Census Bureau, Metropolitan Statistical Area/Metropolitan Division (MSA/MD) income represents the median family income of MSA/MD where the tract is located. If the tract is not located within an MSA/MD, the income represents the median family income of the rest parts of the MSA/MDs in the state. The FFIEC Online Census Data System provides the relative percentage of a tract's median family income compared to the corresponding MSA/MD family income that a tract is located in (or the median family income of other parts in the state if a tract is not located within an MSA/MD boundary). To compare a zip code's median family income to the MSA/MD median family income, we first link a zip code to tract(s) using the HUD-USPS ZIP crosswalk file. We then use the mean values of the matched tracts' relative percentage of the median family income to the MSA/MD. If a zip code matches with multiple tracts, we use the mean values of all matched tracts.

estimate the following regression:

$$\begin{aligned} Ln(SmallBusinesses)_{it} =& \beta_1 Post_t \cdot Target_i \cdot ReducedDisclosureZip_i \\ &+ \beta_2 Target_i + \beta_3 Post_t + \beta_4 ReducedDisclosureZip_i \\ &+ \beta_5 Post_t \cdot ReducedDisclosureZip_i + \beta_6 Post_t \cdot Target_i \\ &+ \beta_7 Target_i \cdot ReducedDisclosureZip_i \\ &+ \delta X_{it} + \gamma_i + \tau_t + \epsilon_{it} \end{aligned} \tag{1}$$

In Equation 1, our dependent variable is the natural log of the number of small business establishments in zip code i by firm size category. *Target* is an indicator variable that equals one for CRA target zip codes (i.e., low- and moderate-), and zero for non-target zip codes (i.e., middle- and high-). *ReducedDisclosureZip* is an indicator variable that equals one if more than 50 percent of the exempt banks in the zip code stopped disclosing after the exemption, and zero otherwise. *ReducedDisclosureZip* thus represents zip code areas with a large post-reform reduction in geographic disclosure. *Post* is equal to one for years 2005-2007, and zero for years 2002-2004. The coefficient of interest is the triple difference estimate β_1 on *Post* $\cdot$ *Target* $\cdot$ *ReducedDisclosureZip*, which captures the difference in the change in small businesses around the reform for the *Target* areas between *ReducedDisclosureZip* and non-*ReducedDisclosureZip*. We expect β_1 to be negative and significant as we posit that after the exemption of mandatory geographic loan distribution disclosures, zip codes with a large reduction in disclosure will experience a more negative change in small business establishments due to a decline in small business lending, and that such effects will be pronounced in CRA target areas. β_2 through β_7 are the estimates of the linear terms and the double interaction terms. Time-varying control variables (X) at the zip code level include population, percentage of population below poverty line, amount of small business lending by large banks, and GDP growth rate. Standard errors are clustered at the zip code level.

4.2 Post-reform lending activities to CRA target areas of non-disclosing banks

While lending data would provide direct evidence on the allocation of credit across areas, such data are not available for non-disclosers who have not collected or reported information on the location of loans since the exemption. Therefore, to provide evidence on the lending behavior of non-disclosers, we use information that is ex-post released in banks' CRA PE reports for a subsample of banks that underwent a CRA evaluation during the post-reform sample period. Appendix B provides an example of a PE report and the information contained therein.

The types of information contained in PE reports include: (i) the definition of banks' assessment area(s), (ii) the summary CRA rating as well as ratings for each of the performance tests[17], and (iii) data and analyses supporting the rating. Geographic distribution of small business loans is one of the primary components of the lending test and is thus located in the lending test section of the report. We find that geographic loan distribution information is provided in heterogeneous formats. For our analysis, we use percentage based on number of loans, as this is the most frequently observed form of presentation.[18] Importantly, the information is provided at the assessment area level. For banks with multiple assessment areas, we use the bank-level information that combines all assessment areas. If such combined data are not given in the report, we aggregate the assessment area-level information to bank-level by weighting the geographic distribution in each assessment area by the total number of loans extended to that assessment area.[19]

PE reports provide data either for the entire evaluation period, or for each year within

[17]The performance tests include lending and community development tests for intermediate small banks, and lending, investment, and service tests for large banks.

[18]We observe that geographic distribution of loans is presented in one or more of the following formats: percentage based on the number of loans, percentage based on the amount of loans, number of loans and /or amount of loans.

[19]If the data on the number of loans at the assessment level are not available, we equal-weighted the percentages across all assessment areas.

the evaluation period. We collect information at the most granular level available in the report. To construct a dataset covering the post-reform years of 2005-2007, we remove any years of data that are outside of this time period from reports with yearly information. For reports that give information for the entire evaluation period, we restrict our sample to reports where the evaluation period consists only of 2005, 2006 and 2007. Therefore, our final dataset contains geographic loan distribution data for 2005, 2006 and 2007 either as separate years or combined if separate year data are unavailable. For the pre-reform period, we use CRA disclosure reports to calculate loan distribution within the assessment area. Our final data is structured at the bank(i)-income area(j) - period(t) level. We estimate the following regression model analogous to our zip code-level regression model (Equation 1).

$$\begin{aligned} Ln(SBL\%)_{ijt} =& \beta_1 Post_t \cdot Target_{ij} \cdot NonDiscloser_i \\ &+ \beta_2 Target_{ij} + \beta_3 Post_t + \beta_4 NonDiscloser_i \\ &+ \beta_5 Post_t \cdot NonDiscloser_i + \beta_6 Post_t \cdot Target_{ij} \\ &+ \beta_7 Target_{ij} \cdot NonDiscloser_i \\ &+ \delta X_{it} + \gamma_i + \tau_t + \epsilon_{ijt} \end{aligned} \tag{2}$$

The dependent variable is the fraction of small business loans extended to income-level area j. *Target* is an indicator variable that equals one for CRA target areas (i.e., low- and moderate-), and zero for non-target areas (i.e., middle- and high-). *NonDiscloser* is an indicator variable that equals one if the bank stopped disclosing after the exemption, and zero otherwise. If non-disclosing banks reduce lending to CRA target areas more than do disclosing banks after the exemption from mandatory geographic loan distribution disclosures, we expect β_1 to be negative. To estimate coefficients within banks, we estimate the regression with bank-fixed effects. We include year fixed effects to account for year specific trends in banks' small business lending. Standard errors are clustered at the bank-level.

5 Results

5.1 Summary statistics

Table 2 shows the summary statistics for the full sample (panel A), for CRA target versus non-target zip codes (panel B), and for Reduced Disclosure Zip codes versus non-Reduced Disclosure Zip codes (panel C). Our sample includes 31,359 target zip code-years (15 percent) and 170,085 non-target zip code years (85 percent) between 2002 and 2007. The Census ZBP dataset provides data on the number of business establishments categorized by size defined using the number of employees. The total number of establishments is the entire number of establishments located in each zip code where business or industrial operation is conducted. Panel B shows, on average, target zip codes have 192 establishments, while non-target zip codes have 212 establishments. For both the target and the non-target zip code samples, the majority of establishments are in the '1 to 9 employees' category. Consistent with our CRA target designation capturing demographic characteristics in the area, the target (non-target) zip codes have higher (lower) percentage of population below the poverty line (22.6 percent for target and 10.9 percent for non-target).[20] The average number of residents is approximately 3,800 in target zip codes, and 4,300 residents in non-target codes. Large banks' small business loans are the total amount of small business loans originated by large banks in each zip code. On average, non-target zip codes have a larger amount of small business loans than target zip codes. The average GDP growth rates are approximately 5.8 percent for both samples. Panel C shows that 75 percent of our sample are classified as Reduced Disclosure Zip, that is, 75 percent of zip codes experience a substantial reduction in the aggregate level of disclosure whereby more than 50 percent of exempt banks operating in the area switch to non-disclosure from 2005. The Reduced Disclosure Zip codes on average

[20]The Census sets the poverty line (or poverty threshold), an estimate of the level below which a household with a certain number of family members cannot maintain the minimum level of nourishment and other necessities (https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html).

have less establishments, a higher percentage of population below the poverty line, more small business loans originated by large banks, and a higher GDP growth rate during the sample period, compared to the non-Reduced Disclosure zip codes.

5.2 Non-disclosure and small establishments in CRA target neighborhoods

Table 3 presents the results from estimating Equation 1. Specifically, we examine the difference in the change in local business activity (measured with the number of business establishments) around the reform for CRA target zip codes between areas with a large versus small reduction in geographic disclosure. In column (1), our dependent variable is the natural log of the total number of establishments. The coefficient on *Post* × *Reduced Disclosure Zip* is economically small and statistically insignificant, suggesting that there is no significant change in the number of establishments around the reform for reduced disclosure zip codes in non-target areas. Similarly, the insignificant coefficient on *Post* × *Target* suggests that there is no significant change in the number of establishments around the reform for zip codes without a large reduction in disclosure in CRA target areas. Our primary interest is the coefficient on the triple interaction term *Post* × *Target* × *Reduced Disclosure Zip*. We find that it is negative and statistically significant (-0.020, t-stat = -2.67), suggesting that among CRA target zip codes, those with a large reduction in disclosure are associated with a decrease in the total number of establishments that is significantly greater than in target zip codes without a large reduction in disclosure. Specifically, having a large reduction in disclosure is associated with a 2 percent decrease in total business establishments in CRA target areas. Columns (2) through (5) present results for each firm size category. In column (2), the dependent variable is the number of establishments with 1 to 9 employees (i.e., establishments in the smallest firm size category). The coefficient on *Post* × *Target* × *Reduced Disclosure Zip* is negative and statistically significant (-0.018, t-stat = -2.24), suggesting a 1.8 percent incremental reduction in small businesses in CRA target

zip codes when there is a large reduction in disclosure. For an average zip code with 153 small business establishments, this represents a decrease of 3 establishments post-reform. For the larger size categories (columns [3] through [5]), we do not observe significantly negative impacts. Together, the results suggest that when the majority of exempt banks in a zip code area switch to non-disclosure, target zip codes experience a decrease in the total number of establishments, which is primarily driven by a decline in small businesses in the smallest size category.

To further explore whether this particular group of zip codes exhibited any noticeably different trends (for example, comparatively greater downward trends in business activities starting well before the reform), we estimate β_1 for each year in our sample, and plot the coefficients in Figure 1. Panels A and B plot the coefficients using total establishments and establishments in the smallest size category (i.e., 1-9 employees), respectively. In both plots, we observe that the differential effects are statistically not different from zero for the pre-reform years, and that a meaningful decline occurs after 2005.

5.3 Cross-Sectional Analyses

We further investigate the heterogeneity in this negative effect along several dimensions to shed light on the mechanism through which the reduction in disclosure impacts local business activity. Prior literature documents that the public disclosure of information has a disciplinary effect on firms through public shaming and making the undesirable behavior costly (Miller, 2006; Dyck et al., 2008; Christensen et al., 2020; Johnson, 2020). We predict that the effect will be more pronounced in areas where banks likely incurred greater costs from the mandatory CRA disclosure requirements before the reform, as these areas will see a greater reduction in adherence to the CRA (i.e., lending to LMI areas). We use three proxies that capture CRA disclosure costs: the share of racial minority population in the area, community oversight, and bank competition in the local geographical market.

5.3.1 Racial minority population. We are motivated to examine whether the effect varies based on the share of racial minority population because of the importance of fair lending initiatives targeted toward minority borrowers under the CRA, and numerous studies which document unequal treatment of minority borrowers in consumer financial markets (e.g. Munnell et al., 1996) and even within CRA target areas (e.g. Bostic and Lampani, 1999; Immergluck, 2002; Begley and Purnanandam, 2021). Additionally, banks operating in high minority areas incur greater costs from the CRA disclosure, as the predominant focus of CRA activism is on banks' differential treatment of clients based on race, rather than income levels (Bates and Robb, 2015). In Table 4, we split the sample based on the sample median share of minority population in the zip code area. Minority population is calculated as the percentage of non-white population divided by total population in the zip code. Our results show that LMI areas in predominantly white neighborhoods (columns [1] and [3]) were not associated with a statistically significant decrease in business activities when disclosure intensity in the area was reduced. This stands in contrast to the results reported in columns (2) and (4), which show that LMI areas that were predominantly non-white experienced significantly reduced business activities. Together with our main findings, these results suggest that the negative impact of disclosure reduction on small business activity primarily took place in CRA target zip codes with a high proportion of racial minority population.

5.3.2 Community oversight. Next, banks operating in areas with greater scrutiny from community groups likely faced greater disclosure costs, as geographic disclosures provided community organizations with valuable information for monitoring lenders' performance in meeting local credit needs. Thus, we expect that the decline in credit, and consequently small business activity, following the disclosure elimination would be greater in these areas where CRA disclosure was more costly. Following Dou and Zou (2018), we measure the extent of scrutiny by community groups at the state level, calculated as the number of community and social service occupations per small business loan in each state. In Table 5, we split the

sample based on the sample median. Consistent with stronger community oversight imposing greater disclosure costs under the mandatory disclosure regime, we observe that the adverse impact of the disclosure reform mainly manifests in the subsample of areas with greater monitoring by community organizations. These results are also consistent with the findings by Dou and Zou (2018) who show that banks operating in areas with stronger community scrutiny were able to improve financial performance after the disclosure reform.

5.3.3 Bank competition. Prior literature shows banks in more competitive markets are less willing to lend to firms for which there are greater informational asymmetries (e.g., small businesses) (Petersen and Rajan, 1994), and that consequently bank competition may result in less firm creation where informational frictions are higher (Bonaccorsi et al., 2004). Taken together, these findings suggest under the mandatory disclosure regime, the costs of the CRA disclosures were likely higher for banks in more competitive markets as they were faced with pressure to increase lending to LMI areas where they would otherwise have not been willing to lend, as informational frictions are often more severe in these neighborhoods (e.g. Khwaja and Mian, 2008; Chodorow-Reich, 2014; Nguyen, 2019). Table 6 presents the results. We proxy bank competition with the number of small and intermediate small bank branches in the zip code, and split the sample based on the sample median. Columns (1) and (3) show that CRA target areas with a large reduction in disclosure did not experience any differential changes in local businesses where bank competition was low. On the contrary, columns (2) and (4) show that local businesses in CRA target areas were adversely impacted in areas where bank competition was high. Our analysis shows that the adverse effects of disclosure elimination are more pronounced in competitive markets.

5.4 Labor Market Consequences

In this section, we examine whether there are any consequences of our findings in the local labor market. Specifically, we examine two measures of labor market activity: em-

ployment and wages. Detailed employment data by establishment size are not publicly available. Therefore, to construct a measure that captures the share of small establishments' employment, we follow Adelino et al. (2015) and Smolyansky (2019) and calculate small establishment employment as the percentage of employees attributable to small businesses.[21] Average wages are calculated as annual payroll divided by total number of employment in a zip code. Table 7 shows the results. The dependent variables are the natural logarithm of employment share attributable to small business establishments (i.e., establishments with 1-9 employees) and the natural logarithm of average wages, and the independent variables are identical to Equation 1. Columns (1) and (2) show that in CRA target areas, zip codes where there was a large reduction in disclosure were associated with a 1.2% decrease in small business employment (t= -2.15) and a 1.5% decrease (t=-2.19) in average wages.[22]

5.5 Robustness

5.5.1 New business registrants. Using the Startup Cartography Project (SCP) data developed by Andrews et al. (2020), we use newly registered businesses as an alternate measure of local business activities. The SCP is based on new business registration records for all types of business structures, including partnerships, LLCs, and corporations (Barrios et al., 2021). The SCP dataset provides insights into new business creation, complementing the evidence we obtained using Census ZBP, which includes branches of *existing* businesses, as well as new businesses. Table 8 presents the results. The coefficient on *Target* × *Post* × *Reduced Disclosure Zip* is negative and statistically significant (-0.030, t-stat = -2.02), suggesting a

[21] In particular, we use the ZBP dataset that provides information about the number of employment by each establishment size category (e.g., establishments with 1-4 employees, establishments with 5-9 employees, etc.) and consider small businesses as establishments with 1-4 employees and 5-9 employees categories. Then, we multiply the number of establishments by the middle point of each business size category. For example, employment for establishments with 1-4 employees is calculated as the number of establishments multiplied by 2.5. Employment for establishments with 5-9 employees is calculated as the number of establishments multiplied by 7. Therefore, employment share attributable to small business establishments is the sum of employment for establishments with 1-4 workers and employment for establishments with 5-9 workers divided by total employment.

[22] In an untabulated test, we do not find a statistically significant effect for employment share attributable to larger size establishments (i.e.,establishments with 10 to 499 employees).

greater reduction in newly registered businesses in target zip codes that experienced a large reduction in disclosure than in those that did not. These results provide inferences similar to our main results obtained using the Census ZBP data.

5.5.2 Entropy balanced samples. It is possible that our results may be confounded by systematic differences in observable and unobservable geographic-level characteristics between zip codes where many banks switched to non-disclosure and those where most continued to disclose. To assess this possibility, we use entropy-balanced samples of Reduced Disclosure Zip and non-Reduced Disclosure Zip, where observations are now weighted such that the distributions of the two samples are identical along the first and the second moments for all of the control variables used in Equation 1. Table 9 presents the results from estimating Equation 1 after entropy balancing. Our results are similar to the findings in Table 3, suggesting that geographic-level characteristics are unlikely to be the primary driver of our results.

5.6 Non-disclosure and small business lending in CRA target neighborhoods – evidence from the PE report sample

5.6.1 Non-disclosure and geographic distribution of small business lending. In this section, we use information obtained from PE reports to provide evidence on non-disclosing banks' small business lending to CRA target tracts during the period of non-disclosure. Table 10 shows our sample selection procedure for the PE report sample. Out of our sample of 1,091 disclosure-exempt banks, we identified 837 PE reports from 717 banks that underwent at least one CRA evaluation between 2006 and 2009. During our review of the PE reports, we record the evaluation period of the lending test, a component of which is the evaluation of the distribution of small business loans across the four geographic income areas. Evaluation periods almost always cover multiple years. We restrict our sample to reports with evaluation periods that include our years of interest (2005-2007). While PE reports

provide geographic distribution information at the assessment area level, we aggregate this information to bank level for our analysis. Therefore, we require the availability of complete data for all assessment areas of a bank. After applying these filters, our final PE report sample consists of 528 reports from 496 banks of which 276 are non-disclosers and 292 are disclosers.

Table 11 presents the estimation results of Equation 2. In both columns (1) and (2), the coefficient on *Post* × *Target* × *Non-discloser* is negative and statistically significant (-0.023, t-stat = -2.00), suggesting that non-disclosing banks reduce small business loans to CRA target areas significantly more than disclosing banks. These results corroborate our prior findings regarding small business activities in the CRA target areas versus non-target areas, with additional evidence on the lending pattern of non-disclosing banks during the period of non-disclosure.

5.6.2 Additional descriptive evidence on other community development activities of non-disclosers. Aside from the lending performance test, which includes an evaluation of the geographic distribution of loans, banks' CRA performance is also assessed based on investment and service tests (or community development tests for intermediate small banks). PE reports disclose detailed information on any community development activities that the bank performed during the evaluation period. In this section, we examine whether non-disclosing banks' community activities exhibit different patterns from disclosing banks to investigate whether other community activities under the CRA could be the main driver of the decline in small business activities in target areas after the reform. We examine three major types of CRA activities – (i) community development loans, (ii) investments, and (iii) donations.[23] In Table 12, we observe that during the post-reform period, non-disclosing banks' community development loans, investments and donation amounts were not different

[23]The PE reports provide a regulator's review of a bank's community development lending, investment, and donation. Community development loan refers to a loan with the primary purpose of revitalizing low- and moderate-income regions through lending activities. Investment and donation refer to the amount of qualified investment, deposits, grants, and donations to community development initiatives.

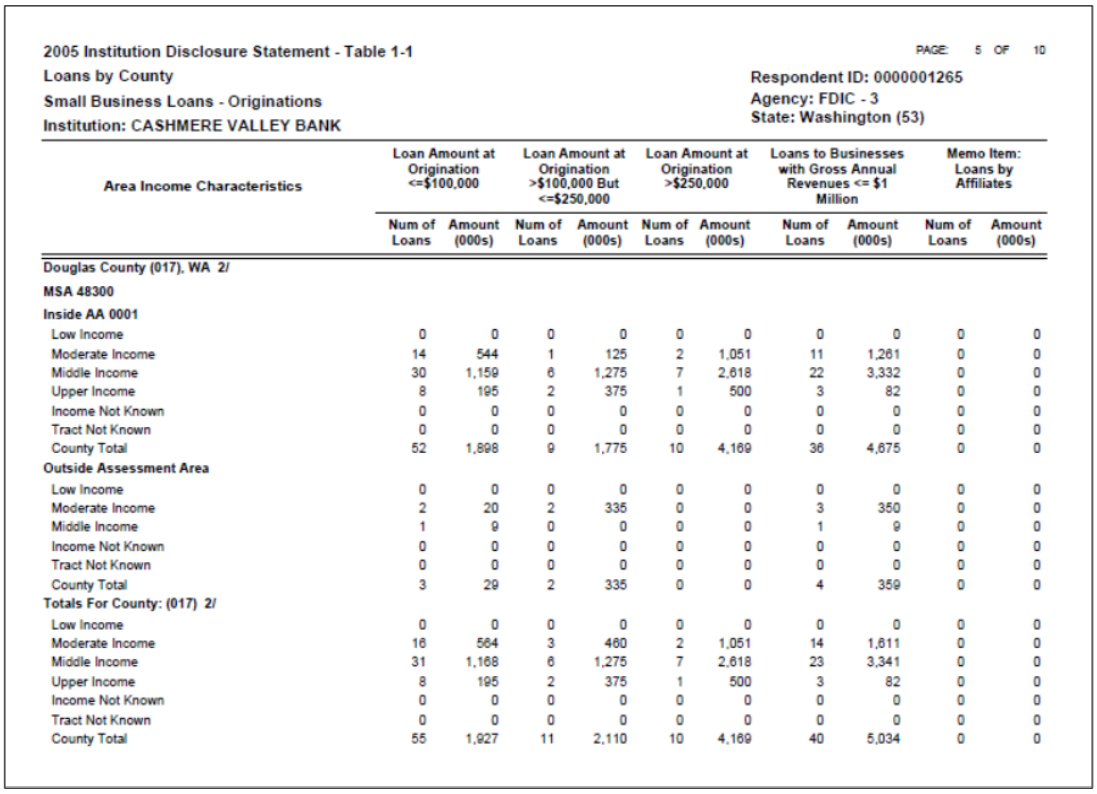
from that of disclosing banks. While descriptive, these results provide additional evidence that differences in other community activities are not likely to be the primary explanation for the reduction in small business activities in LMI zip codes with a large proportion of non-disclosing banks.

6 Conclusion

This study examines the effects of banks' geographic loan distribution disclosures. We focus on the 2005 CRA reform, which changed the asset threshold for mandatory disclosure requirements of geographic loan information. Using a triple difference design, we investigate whether such disclosures have a significant impact on local small businesses. We find that zip codes where the majority of disclosure-exempt banks stop disclosing after the 2005 reform are associated with an incremental decrease in small businesses in low- and moderate- income zip codes which the CRA targets. Additionally, we document that the areas affected most are areas that are predominantly non-white, and areas with stronger community scrutiny and greater bank competition during the pre-reform period. Using information obtained from CRA PE reports, we provide evidence that, after the reform, non-disclosing banks indeed reduced lending to CRA target areas. Overall, our study contributes to the literature on the real effects of banking disclosures on small businesses and local business activities.

Appendix A: Example of CRA Disclosures

The figure shows an excerpt of Cashmere Valley Bank's geographic lending disclosure for Douglas County in Washington in YR 2005. The geographic loan disclosures demonstrate loan originations by four median income groups including (a) low, (b) moderate, (c) middle, and (d) upper. We exclude loan originations that are associated with "income not known" or "tract not known." According to the FFIEC, these income breakdowns are based on the census tract median family income relative to the MSA/MA median family income.



2005 Institution Disclosure Statement - Table 1-1 PAGE: 5 OF 10

Loans by County

Small Business Loans - Originations

Institution: CASHMERE VALLEY BANK

Respondent ID: 0000001265
Agency: FDIC - 3
State: Washington (53)

Area Income Characteristics	Loan Amount at Origination <=$100,000		Loan Amount at Origination >$100,000 But <=$250,000		Loan Amount at Origination >$250,000		Loans to Businesses with Gross Annual Revenues <= $1 Million		Memo Item: Loans by Affiliates	
	Num of Loans	Amount (000s)	Num of Loans	Amount (000s)	Num of Loans	Amount (000s)	Num of Loans	Amount (000s)	Num of Loans	Amount (000s)
Douglas County (017), WA 2/										
MSA 48300										
Inside AA 0001										
Low Income	0	0	0	0	0	0	0	0	0	0
Moderate Income	14	544	1	125	2	1,051	11	1,261	0	0
Middle Income	30	1,159	6	1,275	7	2,618	22	3,332	0	0
Upper Income	8	195	2	375	1	500	3	82	0	0
Income Not Known	0	0	0	0	0	0	0	0	0	0
Tract Not Known	0	0	0	0	0	0	0	0	0	0
County Total	52	1,898	9	1,775	10	4,169	36	4,675	0	0
Outside Assessment Area										
Low Income	0	0	0	0	0	0	0	0	0	0
Moderate Income	2	20	2	335	0	0	3	350	0	0
Middle Income	1	9	0	0	0	0	1	9	0	0
Income Not Known	0	0	0	0	0	0	0	0	0	0
Tract Not Known	0	0	0	0	0	0	0	0	0	0
County Total	3	29	2	335	0	0	4	359	0	0
Totals For County: (017) 2/										
Low Income	0	0	0	0	0	0	0	0	0	0
Moderate Income	16	564	3	460	2	1,051	14	1,611	0	0
Middle Income	31	1,168	6	1,275	7	2,618	23	3,341	0	0
Upper Income	8	195	2	375	1	500	3	82	0	0
Income Not Known	0	0	0	0	0	0	0	0	0	0
Tract Not Known	0	0	0	0	0	0	0	0	0	0
County Total	55	1,927	11	2,110	10	4,169	40	5,034	0	0

Each column represents the number and the amount of loan origination by loan type (i.e., mortgage loans, small business loans, small farm loans, or others). In particular, "loan amount at origination <= \$100,000," "loan amount at origination > \$100,000 but <= \$250,000," and "loan amount at origination > \$250,000" show mortgage loan origination. "Loans to businesses with gross annual revenues <= \$1 million" represent small business loan origination. Although there are mainly three types of loans disclosed in the CRA reports (i.e., mortgage, small business, and small farm loans), banks are required to disclose loan origination for mortgage loans under the Home Mortgage Disclosure Act (HMDA) both before and after the exemption. Also, the amount of small farm loans is extremely miniscule relative to mortgage loans or small business loans. Therefore, this study focuses on the effects on small business lending of the CRA disclosure reform and its real effects on local small business environments.

Appendix B: Performance Evaluation (PE) Report

This figure shows an excerpt of Salin Bank & Trust Company (RSSD #123646)'s Performance Evaluation (PE) report published on November 3, 2008. The FRB examined the bank between December 5, 2006 and November 3, 2008 using the Interagency Intermediate Small Bank Examination Procedures. The PE report includes various information related to the banks' CRA performance such as the overall CRA rating, the lending test rating, the community development test rating, geographic distribution of small business loans, total small business loans, assessment areas, and other community development activities. We manually collect information in the PE reports to analyze whether non-disclosers change their lending behaviors in target (versus non-target) areas after the 2005 CRA reform. For example, the figure below describes geographic distribution of small business loans for years 2006 and 2007 originated by Salin Bank & Trust Company.

Small Business Loans

Information regarding the distribution of small business loans originated by the Bank and by all CRA data reporters in the combined assessment area in 2006 and 2007 based on the census tract income designation of the geography where the borrower is located is provided in Exhibit 15. The exhibit also provides information about the number and percentage of businesses that operate in each income category according to 2007 Dun & Bradstreet information. This format is used throughout this document when evaluating the geographic distribution of commercial loans in each assessment area.

EXHIBIT 15
SALIN BANK & TRUST COMPANY
GEOGRAPHIC DISTRIBUTION OF 2006 AND 2007 COMMERCIAL LOANS
COMBINED ASSESSMENT AREA

Census Tract Income Classification	Businesses		Bank's Commercial Loans 2006		Bank's Commercial Loans 2007		Aggregate's Commercial Loans 2006		Aggregate's Commercial Loans 2007	
	#	%	#	%	#	%	#	%	#	%
Low	620	1.6	1	0.5	2	1.7	401	1.2	657	1.8
Moderate	7,235	19.0	72	33.3	36	30.5	4,839	15.0	5,216	14.5
Middle	17,179	45.1	105	48.6	44	37.3	13,808	42.7	14,936	41.6
Upper	13,040	34.2	38	17.6	36	30.5	13,290	41.1	15,057	42.0
Unknown	22	0.1	0	0.0	0	0.0	15	0.0	20	0.1
Totals	38,096	100.0	216	100.0	118	100.0	32,353	100.0	35,216	100.0

This information indicates that the percentage of small business loans made by the Bank in low- and moderate-income geographies is very strong (32%-34%) compared with both demographic data (20.6%) and aggregate performance data (approximately 16% each year). The Bank's performance is especially strong in moderate-income geographies. The low volume of loans in low-income geographies, especially in 2006, is misleading in that the addition of one or two more loans in these low-income geographies would bring the Bank's percentage in line with demographics and the aggregate. One or two loans are not significant in this context.

Appendix C: Variable Description

Zip code analyses		
Variable	Description	Source
Total Number of Establishments	Total number of establishments located in each zip code at which business is conducted or industrial operations are performed	Census ZBP
Number of Establishments with 1 to 9 Employees	Number of establishments with 1 to 9 paid employees in the mid-March pay period	Census ZBP
Number of Establishments with 10 to 99 Employees	Number of establishments with 10 to 99 paid employees in the mid-March pay period	Census ZBP
Number of Establishments with 100 to 249 Employees	Number of establishments with 100 to 249 paid employees in the mid-March pay period	Census ZBP
Number of Establishments with 250 to 499 Employees	Number of establishments with 250 to 499 paid employees in the mid-March pay period	Census ZBP
Employment	Small establishment employment share in a zip code. We follow Adelino et al. (2015) and Smolyansky (2019) and calculate small establishment employment share as the percentage of employees attributable to small businesses.	Census ZBP
Wage	Annual payroll divided by total number of employment in a zip code	Census ZBP
New Business Registrants	Number of new business registrants in a zip code	Cartography Project
Reduced Disclosure Zip	An indicator variable equal to 1 if more than 50% of the exempt banks in a zip code stopped disclosing after the exemption, and 0 otherwise	CRA Reports
Post	An indicator variable equal to 1 for observations in years 2005-2007, and 0 in years 2002-2004	
Target	An indicator variable equal to 1 if a zip code is categorized as a CRA target zip code (i.e., low- and moderate- income) where the percentage of median family income relative to the MSA/MA income is less than 80% and greater than 0%, and 0 otherwise	FFIEC
Population	Population at the zip code level, computed as the mean of the matched tracts' population	FFIEC
Below Poverty Line	Percentage of population below poverty line at the zip code level, computed as the mean of the matched tracts' percentage of population below poverty line	FFIEC
Amount of Small Business Loans by Large Banks	Amount of loans to businesses with gross annual revenues less than or equal to $1 million (in thousands of dollars) offered by large banks calculated at the county level	CRA Reports
GDP growth rate	GDP growth rate by county level	BEA
Minority	An indicator variable equal to 1 if the percentage of non-white population divided by total population in a zip code is above the median (high minority) and 0 otherwise	FFIEC
Competition	An indicator variable equal to 1 if total number of small and intermediate small bank branches in a zip code is above the median (high competition) and 0 otherwise	FDIC
Community Worker	An indicator variable equal to 1 if the total number of community workers per small business loans in a state is above the median (high oversight) and 0 otherwise. The number of community workers include community and social service occupations that are rounded to the near ten from the Occupational Employment Statistics Survey	Bureau of Labor

PE report analyses		
Variable	Description	Source
Small business loan %	The number of small business loans to each of the low-, moderate-, middle-, and upper- income areas within a bank's assessment area(s) as a percentage of the total number of small business loans extended in the assessment area(s). For the post-reform period, the data are collected from banks' performance evaluation reports at the assessment area level. For banks with multiple assessment areas, the measure is aggregated at the bank level, using the total number of small business loans to each assessment area as weight. For the pre-reform period, the data are collected from banks' CRA disclosure reports	FDIC, FRB, OCC/OTS, FFIEC
Community development loans	Natural logarithm of community development loans annualized over the performance evaluation period	FDIC, FRB, OCC/OTS
Investment	Natural logarithm of community investments annualized over the performance evaluation period	FDIC, FRB, OCC/OTS
Donation	Natural logarithm of community donations annualized over the performance evaluation period	FDIC, FRB, OCC/OTS
Non-discloser	An indicator variable equal to 1 if a bank discloses geographic lending distribution data before the exemption but stops after the exemption, and 0 if a bank discloses both before and after the exemption	FFIEC
Post	An indicator variable equal to 1 for observations in years 2005-2007, and 0 in years 2002-2004	
Target	An indicator variable equal to 1 if for low- and moderate-income areas within the bank's assessment area(s), and 0 for middle- and upper-income areas	FFIEC
Size	Natural logarithm of total assets (RCFD2170)	Call Reports
ROA	Operating income (RIAD4000) divided by total assets (RCFD2170)	Call Reports
Deposits	Total domestic deposits (RCON2200) divided by total assets (RCFD2170)	Call Reports

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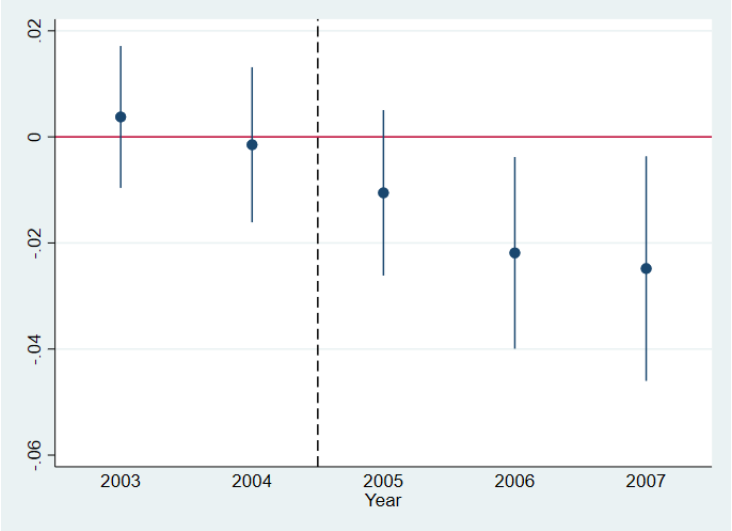
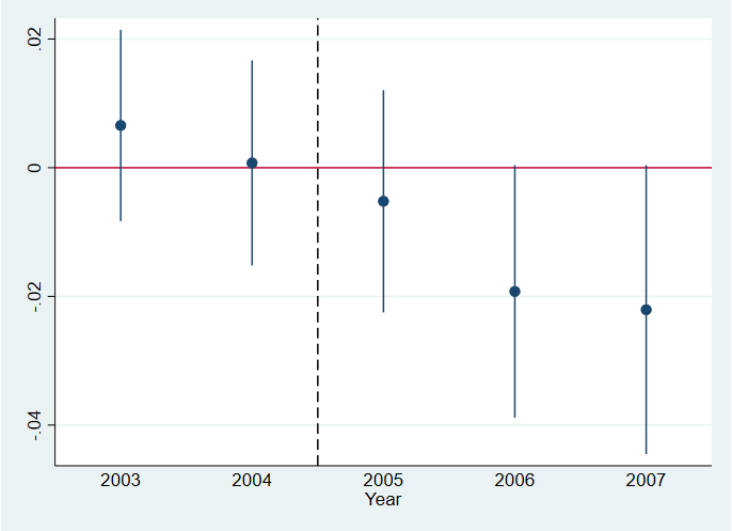
Figure 1: Changes in Business Establishments for Reduced Disclosure Zip codes in CRA Target Areas



(a) Total establishments



(b) Small establishments (1 - 9 employees)

Figure 1 shows the effects of the CRA disclosure exemption on (a) the number of total establishments and (b) the number of small establishments with 1 to 9 employees in target areas. The dotted line represents the period when bank regulators issued the CRA reform in year 2005. The blue dots and lines represent coefficients and 90% confidence intervals respectively.

Table 1: Disclosers vs Non-disclosers

Total	*N* (%)
Total exempt banks (total intermediate small banks)	1091 (100%)
Non-disclosers (banks that *stop* disclosing geographic lending distribution disclosures)	595 (55%)
Disclosers (banks that *continue* disclosing geographic lending distribution disclosures)	496 (45%)

This table presents the sample selection of intermediate small banks by exploiting the CRA reform in 2005. Prior to the reform, banks that had more than $250 million in assets (then "large banks") were required to disclose the geographic distribution of small business lending in annual CRA reports. In 2005, bank regulators raised the threshold for large banks to assets of $1 billion. Banks with assets between $250 million and $1 billion are referred to as "intermediate small banks" and deemed exempt from CRA reporting. Out of intermediate small banks, we dropped 54 banks because the FDIC identifiers were not matched with the CRA report IDs. Therefore, there are 1,091 intermediate small banks in total. Non-disclosers consist of banks that disclose geographic loan distribution before the exemption but stop disclosing after the exemption. Disclosers consist of banks that disclose before and after the exemption. In our sample, we observe that 595 banks are Non-disclosers (55%) and 496 banks are Disclosers (45%).

Table 2: Summary statistics

Panel A: Full Sample

	N	Mean	SD	25%	50%	75%
Total Establishment	201444	209.049	373.680	10.000	41.000	236.000
Estab with 1-9 Employees	201444	153.414	268.264	8.000	33.000	179.000
Estab with 10-99 Employees	201444	50.777	99.680	1.000	7.000	50.000
Estab with 100-249 Employees	201444	3.483	8.295	0.000	0.000	3.000
Estab with 250-499 Employees	201444	0.875	2.380	0.000	0.000	1.000
Population (1000's)	201444	4.258	1.807	3.074	4.096	5.183
Below Poverty Rates	201444	12.686	8.245	6.777	10.873	16.460
Loan Amount by Large Banks	201444	0.117	0.324	0.005	0.020	0.090
GDP Growth Rate	201444	5.823	6.053	2.760	5.170	8.200

Panel B: Target vs. Non-target areas

	Target			Non-Target		
	N	Mean	SD	*N*	Mean	SD
Total Establishment	31359	192.352	349.982	170085	212.128	377.807
Estab with 1-9 Employees	31359	135.347	244.921	170085	156.745	272.219
Estab with 10-99 Employees	31359	51.548	99.191	170085	50.635	99.769
Estab with 100-249 Employees	31359	3.817	8.595	170085	3.421	8.237
Estab with 250-499 Employees	31359	0.998	2.563	170085	0.852	2.343
Population (1000's)	31359	3.830	2.043	170085	4.337	1.749
Below Poverty Rates	31359	22.590	10.506	170085	10.860	6.225
Loan Amount by Large Banks	31359	0.098	0.237	170085	0.121	0.338
GDP Growth Rate	31359	5.806	6.058	170085	5.827	6.052

Panel C: Reduced disclosure Zip codes vs. Non-reduced disclosure Zip codes

	Reduced Disclosure Zip			Non-Reduced Disclosure Zip		
	N	Mean	SD	*N*	Mean	SD
Total Establishment	151529	203.078	376.649	49915	227.176	363.924
Estab with 1-9 Employees	151529	148.578	270.017	49915	168.094	262.328
Estab with 10-99 Employees	151529	49.721	100.630	49915	53.984	96.669
Estab with 100-249 Employees	151529	3.415	8.413	49915	3.688	7.925
Estab with 250-499 Employees	151529	0.866	2.428	49915	0.904	2.226
Population (1000's)	151529	4.217	1.754	49915	4.384	1.955
Below Poverty Rates	151529	13.135	8.335	49915	11.324	7.808
Loan Amount by Large Banks	151529	0.124	0.363	49915	0.096	0.151
GDP Growth Rate	151529	5.919	6.291	49915	5.533	5.256

This table presents summary statistics of our dataset. *Total Number of Establishments* is the total number of establishments operating in a zip code at which business is conducted or industrial operations are performed. *Estab with 1-9 Employees* is the number of establishments with one to nine employees. *Estab with 10-99 Employees* is the number of establishments with ten to ninety-nine employees. *Estab with 100-249 Employees* is the number of establishments with one hundred to two hundreds and fourty-nine employees. *Estab with 250-499 Employees* is the number of establishments with one hundred to two hundreds and fourty-nine employees. *Population* is the total number of population in a zip code in thousands. *Below Poverty Rates* is the percentage of people living below the poverty line as defined by the Census. *Loan Amount by Large Banks* is the amount of small business loans originated in a zip code by large banks in million dollars. *GDP Growth Rate* is the growth rate of GDP at the county level in percentage. The sample period is from 2002 to 2007. See Appendix C for variable descriptions.

Table 3: Disclosure exemption and local business activity

	(1) Ln(Total Estab)	(2) Ln(n1_9)	(3) Ln(n10_99)	(4) Ln(n100_249)	(5) Ln(n250_499)
Post × Target × Reduced Disclosure Zip	-0.020***	-0.018**	-0.009	-0.014	0.003
	(-2.67)	(-2.24)	(-1.00)	(-1.59)	(0.36)
Post × Reduced Disclosure Zip	-0.004	-0.005*	0.000	0.001	0.004
	(-1.44)	(-1.96)	(0.12)	(0.39)	(1.19)
Post × Target	-0.008	-0.009	-0.017**	-0.008	-0.014*
	(-1.28)	(-1.19)	(-2.09)	(-1.03)	(-1.81)
Ln(Population)	0.070***	0.071***	0.066***	0.041***	0.015**
	(9.99)	(9.93)	(7.56)	(5.35)	(2.30)
Below Poverty Rates	0.001***	0.001***	-0.000	0.001**	0.000
	(2.85)	(3.56)	(-0.25)	(2.45)	(0.59)
Loan Amount by Large Banks	0.002*	0.002*	0.004***	0.002*	0.001*
	(1.92)	(1.83)	(3.04)	(1.82)	(1.65)
GDP Growth Rate	-0.000	-0.000	-0.000	0.000	0.000
	(-1.14)	(-1.35)	(-0.67)	(1.51)	(0.39)
Year FE	Yes	Yes	Yes	Yes	Yes
Zip Code FE	Yes	Yes	Yes	Yes	Yes
Adj-R^2	0.994	0.992	0.986	0.967	0.912
N	201444	201444	201444	201444	201444

This table presents the effects of disclosure of geographic loan distribution on small establishments. The dependent variables are the natural logs of the number of establishments. *Ln(Total_Estab)* is the natural logs of total number of establishments in a zip code. *Ln(n1_9)* is the natural logs of number of establishments operating with one to nine employees in a zip code. *Ln(n10_99)* is the natural logs of number of establishments operating with ten to ninety-nine employees in a zip code. *Ln(n100_249)* is the natural logs of number of establishments operating with one hundred to two hundreds and forty-nine employees in a zip code. *Ln(n250_499)* is the natural logs of number of establishments operating with two hundreds and fifty to two hundreds and four hundreds and ninety-nine employees in a zip code. The dependent variables are regressed on the triple interaction of *Reduced Disclosure Zip*, *Post* and *Target* areas. *Reduced Disclosure Zip* is an indicator variable equal to one if a zip code has more than or equal to 50% of non-disclosers after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions. Control variables include natural log of population, percentage of population below poverty line, natural log of small business loans offered by large banks, and GDP growth rate. The unit of analysis is at the zip code-year level. All specifications include zip code and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 4: Disclosure exemption and local business activity: Minority population

	Total Establishment		Small Establishment	
	(1)	(2)	(3)	(4)
	Low Minority	High Minority	Low Minority	High Minority
Post × Target × Reduced Disclosure Zip	-0.007	-0.023***	-0.007	-0.021**
	(-0.50)	(-2.61)	(-0.46)	(-2.20)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Zip Code FE	Yes	Yes	Yes	Yes
Adj-R^2	0.993	0.994	0.990	0.992
N	98341	98330	98341	98330

This table presents the cross-sectional effects of CRA disclosure exemption on the number of total and small establishments for CRA target areas by the percentage of minority population. *Total Establishment* is the natural logs of total number of establishments in a zip code. *Small Establishment* is the natural logs of number of small establishments operating with one to nine employees in a zip code. *Minority Population* is an indicator variable equal to one if the percentage of non-white population divided by total population in a zip code is above the median (high minority) and zero otherwise. The dependent variables are regressed on the triple interaction of *Reduced Disclosure Zip*, *Post* and *Target* areas. *Reduced Disclosure Zip* is an indicator variable equal to one if a zip code has more than or equal to 50% of non-disclosers after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions. Control variables include natural log of population, percentage of population below poverty line, natural log of small business loans offered by large banks, and GDP growth rate. The unit of analysis is at the zip code-year level. All specifications include zip code and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 5: Disclosure exemption and local business activity: Community workers

	Total Establishment		Small Establishment	
	(1)	(2)	(3)	(4)
	Low Community	High Community	Low Community	High Community
Post × Target × Reduced Disclosure Zip	-0.011	-0.036***	-0.007	-0.038***
	(-1.20)	(-2.83)	(-0.73)	(-2.74)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Zip Code FE	Yes	Yes	Yes	Yes
Adj-R^2	0.993	0.994	0.992	0.993
N	101423	95248	101423	95248

This table presents the cross-sectional effects of CRA disclosure exemption on the number of total and small establishments for CRA target areas by the percentage of community workers. *Total Establishment* is the natural logs of total number of establishments in a zip code. *Small Establishment* is the natural logs of number of small establishments operating with one to nine employees in a zip code. *Community* is an indicator variable equal to one if the number of community workers divided by the number of small business loans in a state is above the median (high community workers) and zero otherwise. The dependent variables are regressed on the triple interaction of *Reduced Disclosure Zip*, *Post* and *Target* areas. *Reduced Disclosure Zip* is an indicator variable equal to one if a zip code has more than or equal to 50% of non-disclosers after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions. Control variables include natural log of population, percentage of population below poverty line, natural log of small business loans offered by large banks, and GDP growth rate. The unit of analysis is at the zip code-year level. All specifications include zip code and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 6: Disclosure exemption and local business activity: Bank competition

	Total Establishment		Small Establishment	
	(1)	(2)	(3)	(4)
	Low Competition	High Competition	Low Competition	High Competition
Post × Target × Reduced Disclosure Zip	-0.005	-0.032***	0.001	-0.032***
	(-0.48)	(-3.22)	(0.05)	(-2.98)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Zip Code FE	Yes	Yes	Yes	Yes
Adj-R^2	0.992	0.994	0.989	0.993
N	102682	98762	102682	98762

This table presents the cross-sectional effects of CRA disclosure exemption on the number of total and small establishments for CRA target areas by the number of bank branches. *Total Establishment* is the natural logs of total number of establishments in a zip code. *Small Establishment* is the natural logs of number of small establishments operating with one to nine employees in a zip code. *Competition* is an indicator variable equal to one if total number of small and intermediate small bank branches in a zip code (high competition) is above the median and zero otherwise. The dependent variables are regressed on the triple interaction of *Reduced Disclosure Zip*, *Post* and *Target* areas. *Reduced Disclosure Zip* is an indicator variable equal to one if a zip code has more than or equal to 50% of non-disclosers after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions. Control variables include natural log of population, percentage of population below poverty line, natural log of small business loans offered by large banks, and GDP growth rate. The unit of analysis is at the zip code-year level. All specifications include zip code and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 7: Disclosure exemption and labor market consequences

	(1) Ln(Employment)	(2) Ln(Wage)
Post × Target × Reduced Disclosure Zip	-0.012**	-0.015**
	(-2.15)	(-2.19)
Controls	Yes	Yes
Year FE	Yes	Yes
Zip Code FE	Yes	Yes
Adj-R^2	0.647	0.852
N	201444	174169

This table presents the effects of CRA disclosure exemption on labor market consequences for CRA target areas. The dependent variables are the natural logs of small establishment employment share and average wage within a given zip code. The dependent variables are regressed on the triple interaction of *Reduced Disclosure Zip*, *Post* and *Target* areas. *Reduced Disclosure Zip* is an indicator variable equal to one if a zip code has more than or equal to 50% of non-disclosers after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions. Control variables include natural log of population, percentage of population below poverty line, natural log of small business loans offered by large banks, and GDP growth rate. The unit of analysis is at the zip code-year level. All specifications include zip code and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 8: Disclosure exemption and new firm creation

	(1) Ln(New Business Registrants)
Post × Target × Reduced Disclosure Zip	-0.030**
	(-2.02)
Controls	Yes
Year FE	Yes
Zip Code FE	Yes
Adj-R^2	0.963
N	157595

This table presents the effects of CRA disclosure exemption on new business registrants for CRA target areas. The dependent variable is natural log of new business registrants in a zip code. The dependent variable is regressed on the triple interaction of *Reduced Disclosure Zip*, *Post* and *Target* areas. *Reduced Disclosure Zip* is an indicator variable equal to one if a zip code has more than or equal to 50% of non-disclosers after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions. Control variables include natural log of population, percentage of population below poverty line, natural log of small business loans offered by large banks, and GDP growth rate. The unit of analysis is at the zip code-year level. All specifications include zip code and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 9: Entropy balanced sample

	(1) Ln(Total Estab)	(2) Ln(n1_9)	(3) Ln(n10_99)	(4) Ln(n100_249)	(5) Ln(n250_499)
Post × Target × Reduced Disclosure Zip	-0.015**	-0.013	-0.007	-0.014	0.004
	(-1.99)	(-1.55)	(-0.63)	(-1.59)	(0.52)
Controls	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Zip Code FE	Yes	Yes	Yes	Yes	Yes
Adj-R^2	0.994	0.992	0.986	0.966	0.909
N	201444	201444	201444	201444	201444

This table shows the effects of CRA disclosure exemption on various size of local establishments using entropy balanced sample. The dependent variables are regressed on the triple interaction of *Reduced Disclosure Zip*, *Post* and *Target* areas. *Reduced Disclosure Zip* is an indicator variable equal to one if a zip code has more than or equal to 50% of non-disclosers after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions. Control variables include natural log of population, percentage of population below poverty line, natural log of small business loans offered by large banks, and GDP growth rate. The unit of analysis is at the zip code-year level. All specifications include zip code and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 10: Performance evaluation report sample

Criteria	*Banks(Reports)*
Exempt banks	1,091
Banks with CRA performance evaluation (PE) reports available during 2006-2009	717 (837)
Restrict to reports with evaluation period including years 2005 - 2007	-150 (-230)
Remove reports with incomplete information on assessment-area level lending distribution	-71 (-79)
Final sample of banks (PE reports)	496 (528)
Non-discloser	276 (235)
Discloser	292 (261)

This table presents the sample selection procedure for the performance evaluation report sample.

Table 11: Small business lending by non-disclosing banks

	(1) SBL%	(2) SBL%
Post × Target × Non-discloser	-0.023**	-0.023**
	(-2.00)	(-2.00)
Target	-0.319***	-0.319***
	(-36.28)	(-36.27)
Post × Non-discloser	0.014**	0.014**
	(2.13)	(2.15)
Post × Target	0.034***	0.034***
	(3.92)	(3.92)
Target × Non-discloser	0.010	0.010
	(0.78)	(0.78)
Size		0.007
		(1.19)
ROA		0.011
		(0.23)
Deposits		0.005
		(0.25)
Year FE	Yes	Yes
Bank FE	Yes	Yes
Adj-R^2	0.342	0.342
N	7768	7768

This table presents non-disclosing banks' small business lending after the reform. The dependent variable is the percentage of small business loans. The dependent variable is regressed on the triple interaction of *Non-discloser*, *Post* and *Target* areas. *Non-discloser* is an indicator variable equal to one for banks that stopped disclosing geographic lending distribution information after the exemption, and zero otherwise. *Post* is an indicator variable equal to one for years after the CRA reform (2005-2007), and zero for years before the reform (2002-2004). *Target* is an indicator variable equal to one for CRA target areas that are low- and moderate-income regions, and zero for non-target areas that are middle- and high-income regions.ROA is return on assets, Size is the natural log of total assets, and Deposits is total domestic deposits divided by total assets. The unit of analysis is at the bank-area-period level. All specifications include bank and year fixed effects. The sample period is from 2002 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.

Table 12: Other community activities by non-disclosing banks post-reform

	(1) Comm. Dev. Loans	(2) Investment	(3) Donations
Non-discloser	-0.058	-0.755	0.148
	(-0.18)	(-1.65)	(0.35)
Size	2.474***	2.239***	1.918***
	(5.77)	(3.39)	(3.15)
ROA	16.452	5.091	-12.710
	(1.18)	(0.30)	(-0.67)
Deposits	1.159	-1.801	-3.408
	(0.63)	(-0.67)	(-1.19)
Adj-R^2	0.049	0.024	0.018
N	498	498	498

This table presents descriptive evidence on non-disclosing banks community activities after the reform. The dependent variables are the amount of community development loans, investments, and donations extended to the assessment area(s) during the post-reform sample period. All dependent variables are annualized over the duration of the performance evaluation period. *Non-discloser* is an indicator variable equal to one for banks that stopped disclosing geographic lending distribution information after the exemption, and zero otherwise. ROA is return on assets, Size is the natural logarithm of total assets, and Deposits is total domestic deposits divided by total assets. The unit of analysis is at the bank-report level. The sample period is from 2005 to 2007. ***, **, and * denote statistical significance at the 1% 5% and 10% levels (all two-tailed), respectively. See Appendix C for variable descriptions.