

Constructive Credit: Revisiting the Performance of Community Reinvestment Act Lending During the Subprime Crisis

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Introduction

In 1977, when advocates and legislators were first debating the merits of Senate Bill 406, *The Community Reinvestment Act of 1977*, the key question confronting Congress was whether or not “redlining” – the practice of denying access to credit based on where one lived – was contributing to the decline of inner city neighborhoods. Advocates argued that banks had a social responsibility to reinvest locally held deposits back into the community where they had branches; in short, the savings of residents in the inner-city shouldn’t be directly solely to promoting homeownership in the suburbs. Evidence of geographic discrepancies in where local banks were lending, coupled with testimony by Ronald Grzywinski, one of the founders of South Shore National Bank of Chicago that was successfully lending in formerly redlined communities, led Senator William Proxmire to conclude that banks did have an obligation to lend in the same communities as where they were taking deposits, and that this could be done in such a way that would not require credit allocations nor pose undue risks to the institution. In defending an attack on the proposed legislation by the American Bankers Association, Senator Proxmire noted, “What we are trying to do here is not provide for any terrible sanction or require that you make loans that aren’t sound. Every loan should be sound...All we are saying is that the job that you do in servicing community needs should be taken into consideration as one element in whether or not branching should be approved. It is a mild proposal, it seems to me (Proxmire 1977: 323).” Indeed, in both its intent and its enforcement mechanism, the CRA sought only to underscore the “long-standing obligation to an institution’s local service area implicit in existing law,” and provide the regulatory agencies with the authority to enforce this principle.

Three decades later, the subprime crisis has led to a renewed debate about the CRA, and whether or not it somehow encouraged banks to make unsound lending decisions. Economist Thomas DiLorenzo, for instance, wrote that the current housing crisis is “the direct result of thirty years of government policy that has forced banks to make bad loans to un-creditworthy borrowers” (DiLorenzo 2007). This “blame the CRA” story has been refuted by industry leaders and researchers. Researchers at the Federal Reserve Board of Governors, for example, found that the majority of subprime loans were made by independent

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mortgage lending companies, which are not covered by the CRA and receive less regulatory scrutiny overall (Avery, Brevoort and Canner 2007). In addition, our previous work found that in California, loans made by CRA regulated institutions performed better on average than loans made by institutions not covered under the CRA (Laderman and Reid 2009).

While these research papers have failed to appease CRA's most vocal critics, this paper is not about trying to disprove yet again that the CRA is to blame for the subprime crisis. In our minds, a much more important question is whether or not the CRA succeeded in providing access to credit to residents of historically underserved communities. Did financial institutions covered by the CRA make loans in low- and moderate-income (LMI) communities during the subprime boom? Perhaps more importantly, did those loans provide "constructive" credit in the community—in other words, were the loans fairly priced, and did they help borrowers not only achieve but also sustain homeownership? Or did they contribute to the current community development crisis, in which neighborhoods are struggling not with suburban flight but rather with the negative spillover effects resulting from subprime lending and subsequent foreclosures? Quite simply, in the most recent period which saw an explosion of private mortgage lending, did the CRA work as its authors intended? And if not, what can we learn from the recent crisis for how the CRA might be restructured going forward?

To help answer these questions, we analyze mortgage lending patterns and loan performance in three states: California, Ohio, and Pennsylvania. These states represent three distinct housing and mortgage markets. California characterizes the "boom and bust" model of the market, with a period of high price appreciation followed by severe house price declines and a rapid and dramatic rise in foreclosures. Ohio, in contrast, saw very little house price changes between 2000 and 2008, and foreclosures began to increase steadily in early 2000, followed by a more rapid rise in foreclosures with the advent of the financial crisis and subsequent recession. Pennsylvania provides an example of a market that sits somewhere between these two extremes, in that it experienced moderate house price appreciation between 2004 and 2006, and its foreclosure trends track both the declines in local house prices and the recession.

The chapter proceeds as follows. First, we provide a brief background on the CRA and review the existing literature on its effects. It is important to note that the CRA is not just about expanding access to mortgage credit: it covers small business lending, community development investments and access to financial services as well. However, in this chapter we focus only on the home mortgage aspect of the CRA. Second, we present an overview of our data and methods. Third, we present the results of our analysis, examining two inter-related questions. First, did institutions regulated under the CRA contribute

to high rates of subprime lending in LMI communities? And second, is there a difference in the performance of loans made by institutions regulated under the CRA versus those made by independent mortgage companies? For each of these questions, we provide results separately for each of the case study states, and discuss the similarities and differences in findings among the three. In the concluding section, we discuss the implications of our findings for policy and suggest future avenues for research.

The Community Reinvestment Act

When the CRA was passed in 1977, it followed on the heels of several other pieces of new legislation designed to address discrimination in housing and credit markets, including the Fair Housing Act, passed as part of the Civil Rights Act of 1968, the Equal Credit Opportunity Act of 1974, and the passage in 1975 of the Home Mortgage Disclosure Act. The CRA established a “continuing and affirmative obligation” that federally insured banks and thrifts meet the credit needs of the communities that they serve, including LMI areas, consistent with safe and sound banking practices. Regulators consider a bank’s CRA record in determining whether to approve that institution’s application for mergers with, or acquisitions of, other depository institutions. Since its passage, the CRA has undergone both regulatory and legislative revisions which have affected the way a bank is evaluated on its CRA performance. Today, a key component of the CRA is the lending test (accounting for 50 percent of a large bank’s CRA rating), which evaluates the bank’s home mortgage, small-business, small-farm, and community-development lending activity. In assigning the rating for mortgage lending, examiners consider the number and dollar amount of loans to LMI borrowers and areas, and whether or not they demonstrate “innovative or flexible lending practices.”²

Researchers who have studied the impact of the CRA find that, on balance, it has reduced information costs and fostered competition among banks serving low-income areas, thereby generating larger volumes of lending from diverse sources and adding liquidity to the market (Avery et al. 1996; Barr 2005; Belsky, Schill and Yezer 2001; Evanoff and Siegal 1996; Litan 2001). In a detailed review, William Apgar and Mark Duda of The Joint Center for Housing Studies at Harvard University concluded that on balance, the CRA has had a positive impact on LMI communities. In particular, the study notes that “CRA-regulated

² As part of their CRA exam, large banks are also evaluated on their investments and services. Under the investment test, which accounts for 25 percent of the bank’s CRA grade, the agency evaluates the amount of the bank’s investments, its innovation, and its responsiveness to community needs. Under the service test, which makes up the remaining 25 percent of the bank’s evaluation, the agency analyzes “the availability and effectiveness of a bank’s systems for delivering retail banking services and the extent and innovativeness of its community development services.” Different rules apply for “small” and “intermediate small” institutions. For more complete details on the CRA regulations, visit <http://www.ffiec.gov/cra/default.htm> for text of the regulations and Interagency Q&A.

lenders originate a higher proportion of loans to lower-income people and communities than they would if CRA did not exist” (Apgar and Duda 2003: 176).

Research has also shown that overall, lending by institutions with a CRA obligation is not inherently more risky or less profitable than banks’ other lending activities. In 2000, a report issued by the Federal Reserve Board concluded that mortgage loans that satisfy the LMI element of the CRA’s Lending Test provided to be at least marginally profitable for most institutions, and that CRA lending performed no differently than other lending (Essene and Apgar 2009). New research on the subprime boom similarly found that the rise in foreclosures was not driven by “unsound” CRA lending. A study by the Center for Community Capital found that prime loans originated between 2003 and 2006 through a LMI-targeted community lending program (the Community Advantage Program (CAP) developed by Self-Help, a community development financial institution) were significantly less likely to be in default than subprime loans made to borrowers with similar income and risk profiles (Ding et al. 2008). Instead, they find that it’s the nature of the loan product and underwriting – for example, if the loan was originated by a mortgage broker, whether it had an adjustable interest rate, or whether it was originated by a mortgage broker—that predicts default, rather than the characteristics of LMI borrowers. They conclude that the observed higher default risk of subprime loans is not attributable solely to borrower risk profiles, but rather to the characteristics of loan products and the origination channel in the subprime market. Laderman and Reid (2009) similarly found that loans made by CRA regulated institutions in California were significantly less likely to be in foreclosure than loans made by independent mortgage companies, which do not have a CRA obligation.

While the CRA may not have been the driver of the foreclosure crisis, it is less clear as to whether it actually succeeded in meeting the credit needs of LMI communities during the subprime boom. Nearly half of all higher-priced loans between 2004 and 2006 were originated by independent mortgage companies rather than by CRA regulated financial institutions, even though these companies only represented about a third of the overall mortgage market (Avery, Brevoort and Canner 2007). More recent analysis by the Federal Reserve Board found that only 6 percent of higher-priced loans were originated by CRA-covered lenders to lower-income borrowers or neighborhoods in their CRA assessment areas, the local geographies that are the primary focus for CRA evaluation purposes (Kroszner 2008). While this does show that the CRA itself did little to cause the subprime boom, it also prompts the question of why LMI communities were predominantly being served by non-CRA regulated institutions. In her testimony in 1977 in support of the CRA, Carol Greenwald, Commissioner for the Massachusetts State Banking Department, pointed out that there were home sales in lower-income neighborhoods in

Boston, but that it wasn't banks that were making the mortgages. "[I]n a substantial number of Boston neighborhoods, bank mortgages are less than 50 percent of the home sales that take place in that neighborhood. That is very interesting, because bank financing is clearly the easiest and least expensive way of purchasing a home. Using a private mortgage company with its shorter maturity loans, and usually higher interest rates is much more expensive. The question then comes why are individuals choosing to go to private mortgage companies rather than going to banks?" (Greenwald 1977: 168) This question, posed more than 30 years ago, is no less salient today.

In addition, banks have increasingly shifted their lending activities away from the neighborhoods in which they have branches—also known as their “assessment areas”, the geographic areas in which their loans receive the greatest scrutiny under the CRA (Avery, Courchane and Zorn 2009). The disappearance of the geographic specificity that once defined mortgage lending has led some to suggest that the whole idea of an “assessment area” has become obsolete. Yet there is growing evidence that locally based lending institutions are an important factor in determining whether or not lower-income borrowers have access to fair credit. For example, researchers at Case Western's Center on Urban Poverty and Community Development used a probabilistic matching technique to link mortgage records from HMDA with locally recorded mortgage documents and foreclosure filings (Coulton et al. 2008). They found loans originated by financial institutions without a local branch had foreclosure rates of 19.08 percent compared to only 2.43 percent for loans originated by local banks. Research by Emre Ergungor of the Federal Reserve Bank of Cleveland found that between 1997 and 2004, the foreclosure rate in a county increased significantly with increasing share of *non*-local and less-regulated bank originations (Ergungor 2007). Laderman and Reid (2009) similarly found that in California, within assessment area lending during the subprime boom performed much better than loans made outside of a bank's CRA assessment area.

It is this nexus between local context, mortgage origination channel, and loan performance that is the focus of this chapter. By examining the performance of loans made by CRA regulated institutions during the subprime boom in three states with distinct housing and mortgage markets, we seek to provide insight into how the CRA might need to be re-aligned to contemporary mortgage markets (see also Chakrabarti et al. 2009).

Data and Methods

The analysis in this paper relies on a loan-level dataset which matches data submitted by financial institutions under the Home Mortgage Disclosure Act (HMDA) of 1975 with data from a national, proprietary dataset on loan performance. From HMDA, we are able to identify whether or not a lender was subject to the CRA, and whether or not the loan was “higher-priced”,³ which is often used as a proxy for subprime, although not strictly analogous (Mayer and Pence 2008). From the loan performance dataset, we are able to assess the delinquency status of the mortgage, as well as the mortgage product features and the borrower’s FICO score. The merged proprietary dataset allows us to examine the performance of loans made by CRA-regulated institutions, which is not possible using either the proprietary dataset or HMDA data alone.

Even so, we are duly cautious about suggesting that our matched set is representative of all loans in California, Ohio and Pennsylvania. In particular, the matched data do not represent a random sample of outstanding mortgage loans. To account for possible bias within the matched data set, we constructed post-sampling weights to increase our confidence that our findings are more generally applicable (Courchane 2007). To create these weights, 24 mutually exclusive cells of data common to both HMDA and the proprietary data were created by interacting race, ethnicity, higher-priced loan, and lender type for both the full HMDA LAR data and the matched data, based on the year of origination. The distributions of the HMDA and matched mortgages over each of the mutually exclusive buckets are then calculated and used to create post-sampling weights by dividing the percentage of the HMDA data in each cell by the percentage of the proprietary data in the equivalent cell. These weights are applied to the matched data set throughout the analysis below.

Key to this analysis is inclusion of mortgage market channel variables that allow us to consider the regulatory framework governing the lending institutions. Specifically, we assess whether or not the loan was financed by a CRA regulated institution, a CRA regulated institution within its assessment area, an affiliate or subsidiary of a CRA regulated institution, or an independent mortgage company. Due to data limitations, we cannot actually assess whether or not any individual loan was counted as part of a bank’s CRA exam. Instead, we use loans made by depository institutions covered by the CRA within their assessment areas as a proxy for CRA-motivated lending. Mortgages made by banks and thrifts in their assessment areas are subject to the most detailed CRA review, including on-site reviews and file checks.

³ In 2004, information was to HMDA added on the interest rate spread to the comparable-maturity Treasury for first-lien mortgages with an annual percentage rate (APR) three percentage points over the Treasury benchmark and for junior liens with an APR five percentage points over the benchmark. Mortgages with a reported spread are commonly called “higher-priced” loans. While not strictly analogous to “subprime”, using the higher-priced designation allows us to avoid the pitfalls of using lenders’ own determinations of “B” and “C” rated mortgages.

The assessment area distinction also correlates with differences in the way mortgages are marketed and sold (Apgar, Bendimerad and Essene 2007). For example, loans made to borrowers living inside the assessment area are likely to come through the institution's retail channel. In contrast, loans made to borrowers living outside of the organization's CRA-defined assessment area are more likely to be originated by loan correspondents or mortgage brokers. We assume that if a lending entity subject to CRA has a branch office in an MSA, then that MSA is part of the entity's assessment area. Loans made in MSAs where the lending entity does not have a branch office are assumed to be originated outside of the entity's assessment area.⁴

We also separate out lending activity by affiliates and subsidiaries of depository institutions into its own category. Depository institutions have broad discretion as to whether or not to include lending by their affiliates and subsidiaries as part of their CRA evaluation, creating a regulatory loophole that complicates any attempts at assessing a bank's overall CRA record (Immergluck 2004; Quercia and Ratcliffe 2009). Our final category is independent mortgage companies (IMCs), which fall outside of not only the regulatory reach of the CRA, but also a broader set of federal regulations and guidance designed to protect the "safety and soundness" of the lender (Apgar, Bendimerad and Essene 2007).

In addition, we also merge in variables that capture general housing, mortgage market, and economic conditions. These include time-varying Federal Housing Finance Agency (FHFA) house price data measured at the MSA/Metropolitan Division, county unemployment rates from Bureau of Labor Statistics (BLS), and prevailing contract interest rates on conventional fixed rate mortgages from Freddie Mac. Static variables include the percent of college graduates and minority residents at the zip code level from the 2000 US Census, and data from the FFIEC on whether a census tract qualifies under the CRA income designation.⁵ The models thus include data on borrower socio-economic and risk characteristics (race, income, FICO score at origination), loan characteristics (loan to value ratio, arm/fixed, higher-priced, prepayment penalty, level of documentation), loan performance (current, in default, or paid off) housing market characteristics (percent change in house values, percent owner occupied), and neighborhood characteristics (percent minority, percent college educated, percent unemployment, CRA designated income level).

⁴ Our methodology is consistent with that of Apgar, Bendimerad, and Essene (2007), who assume that if a lending entity subject to CRA has a branch office in a particular county, then that county is part of the entity's assessment area.

⁵ The FFIEC classifies census codes into "low", "moderate", "middle" and "upper" income tracts to determine CRA eligibility. Census tracts are categorized by the median family income for the tract relative to the median family income for the metropolitan statistical area (MSA) in which the tract is located. Categories are defined as follows: *Low income*, median family income for census tract less than 50 percent of median family income for MSA; *Moderate income*, median family income for census tract 50 percent to 79 percent of MSA median; *Middle income*, median family income 80 percent to 119 percent of MSA median; *Upper income*, median family income 120 percent or more of MSA median.

For this paper, we limit the analysis to a sample of conventional, first-lien, owner-occupied loans originated in metropolitan areas in California, Pennsylvania, and Ohio between January of 2004 and December of 2006. Loan performance outcomes are observed through December of 2008. Observations with missing data or obvious data-coding errors were excluded from the analysis.

Sample means for the data in each of the three states are presented in Figure 1, and demonstrate significant market differences among the three states. As expected, incomes and house values in California are higher than in Ohio and Pennsylvania, as are the proportion of loans with features such as prepayment penalties, no documentation, and adjustable interest rates. California also had a much larger share of mortgage originations among borrowers of color than did Ohio and Pennsylvania. Interesting mortgage market channel differences also emerge; while more than 55 percent of loans in California were originated by a CRA regulated institution within its assessment area, in Ohio this market channel comprised 15.2 percent of all loans, and in Pennsylvania just 11.56 percent. In comparison, in Ohio and Pennsylvania, nearly a third of all loans were originated by affiliates or subsidiaries of depository institutions. California also saw a larger share of loans originated by mortgage brokers through the wholesale channel.

To assess the impact of the CRA on access to credit in LMI neighborhoods, we measure two potential impacts that the CRA could have on mortgage lending. First, using a dichotomous logit model, we assess the relationship between mortgage market channel and the origination of a subprime loan, controlling for borrower and neighborhood risk characteristics. Was the CRA responsible for the growth of subprime lending in LMI communities?

Second, we test to see whether or not loans made by institutions regulated under the CRA are more likely to be in default than those without CRA obligations. Building on previous literature on mortgage defaults (Quercia and Spader 2008), we use option theory to develop our modeling approach for this question. Option theory posits that borrowers decide each month either to make a mortgage payment, to exercise the prepayment option (e.g. sell the home or refinance), or exercise the default option (Foster and Van Order, 1984). These options are competing risks; choosing one eliminates the possibility of the other until the next monthly payment is due. Loan performance is observed each month, and we assume that prepayment and default (as opposed to the reference group of making the mortgage payment) are distinct events that are influenced by different underlying mechanisms. We model these competing risks using the multinomial logit (MNL) framework (Clapp et al. 2001). Although researchers often rely on the Cox

proportional hazards framework to analyze prepayment and default, Clapp and his colleagues have shown that musing the MNL framework allows for estimating a flexible baseline hazard, as opposed to requiring the proportional hazards assumption. The information for each loan is restructured to include one observation for each time period in which that loan is active (i.e., from origination up to and including the period of termination). Once the data are restructured, the likelihood function is identical, in discrete time, to the continuous-time likelihood function for the Cox model. Estimation of the multinomial logit model identifies the effect of the CRA variable on prepayment and default, after controlling for observed borrower and market risk characteristics.

CRA Regulated Institutions and the Incidence of Higher-Priced Lending

In Figure 2, we present the results from our dichotomous logit model predicting the likelihood that a borrower received a higher-priced loan. The model shows the strong positive effect of the CRA on loan originations. We find that CRA regulated institutions—both within and outside of their assessment areas—were significantly less likely to originate higher-priced loans than were independent mortgage companies, even after controlling for a wide range of borrower, neighborhood, and housing market characteristics. The effects are strong and consistent across all three states. In the context of CRA lending, what is important to note is that the marginal effect of the CRA Assessment variable is stronger in LMI neighborhoods than in middle- and upper-income neighborhoods. Running the model independently for these two types of neighborhoods, we find that in LMI neighborhoods—those targeted by the CRA—loans originated by federally regulated lenders within their assessment areas were significantly less likely to be higher-priced. (See Figure 3) Again, this finding was consistent across all three states, reducing the likelihood of receiving a higher-priced loan by around 25 percent. In comparison, the marginal effect of the CRA Assessment variable is weaker in middle- and upper-income neighborhoods, though still significant, and stronger in California than in Ohio or Pennsylvania.

The results for the control variables in the model are consistent with expectations. Borrowers with higher FICO scores were less likely to receive a higher-priced loan, whereas borrowers with a higher loan-to-value ratio or no documentation were significantly more likely to receive a higher-priced loan. Race also matters; even after controlling for a wide range of borrower, neighborhood, and mortgage market characteristics, blacks were between 1.95 and 2.58 times more likely to receive a higher-priced loan than were whites; in California and Pennsylvania, Hispanics were also more likely to receive a higher-priced loan. Borrowers in LMI neighborhoods also saw an increased likelihood of receiving a higher-priced loan; the effect is stronger in Ohio and Pennsylvania than in California, likely due to the high cost of

housing in California over this time period, making it more difficult for LMI borrowers to enter the homeownership market. In California, we also see a significant influence on house prices; rapid house price appreciation in the two years prior to the origination of the loan increased the likelihood of a higher-priced loan origination. The use of non-traditional mortgage products in California over this time period as borrowers sought out “affordability” mortgage products; in 2005, approximately two-thirds of all subprime mortgages in California included exotic features such as option-payments, and had limited or no documentation associated with the loan origination (Sanders 2008). This effect is not seen in Ohio and Pennsylvania. Also consistent with previous research (Ernst, Bocia and Li 2008), we find that borrowers who used a mortgage broker were 4.5 times more likely to get a subprime loan in California than were borrowers who were served by the retail arm of a bank; in Ohio, the odds ratio was 2.36 and in Pennsylvania 3.65.

The demonstrated relationship between CRA Assessment lending and a stronger protective effect in LMI communities is an important finding, however, and demonstrates the importance of consumer protection that is afforded by not only by the CRA but also by more general regulatory oversight, and suggests that that CRA regulated institutions within their assessment areas may have done a better job of aligning loan terms to a borrower’s risk profile.

Nevertheless, our analysis does not provide a ringing endorsement of the CRA either. Loans made outside of the assessment area, and loans made by affiliates, were more likely to be higher-priced than those within the assessment area. So while federally regulated depositories were less likely to engage in subprime lending than were independent mortgage companies, the subprime lending they did do was generally originated by those parts of the financial institution that did not necessarily receive the same regulatory scrutiny under the CRA. Figure 4 provides just one example of how this uneven oversight within federally regulated institutions might have affected disadvantaged communities. African American borrowers, with “prime” credit scores (a FICO over 640), were significantly more likely to get a subprime loan from an affiliate and independent mortgage company than from a CRA regulated institution within its assessment area. If CRA lenders were shifting their high-cost products to their affiliates and subsidiaries (either by increasing their share of subprime lending or by acquiring a mortgage lender as an affiliate), a bank’s CRA record could remain strong even if other parts of the institution may have been contributing to the subprime crisis (Quercia and Ratcliffe 2009).

CRA Regulated Institutions and Loan Performance

In the second stage of the analysis, we examine whether or loans made by CRA regulated institutions within their assessment areas performed better than loans made by other mortgage lenders. In Figure 5, we present the results of our competing risks model of default and prepayment. Here, the effect of CRA plays out quite differently in the three states. In California, loans made by federally regulated depositories performed much better than loans originated by independent mortgage companies, even after controlling for borrower, housing market, and loan characteristics. Indeed, loans originated by CRA regulated institutions within their assessment areas in California were half as likely to be in default as loans made by independent mortgage companies.

In Pennsylvania and Ohio, however, we observe the opposite. In these states, loans originated by CRA lenders within their assessment areas were more likely to be in foreclosure than those originated by independent mortgage companies, all other things being equal. Loans originated by affiliates or subsidiaries in Ohio performed worst, increasing the likelihood of foreclosure by nearly 50 percent over independent mortgage companies. In Pennsylvania, the performance of loans originated by affiliates or by CRA lenders outside their assessment area was not significantly different from loans originated by independent mortgage companies.

This finding went against our *a priori* expectations, since in both this paper and in our previous analyses of lending in California (Laderman and Reid 2009; Reid and Laderman 2009) we found a large and significant positive effect of the CRA on loan performance. To understand the differences between the three markets, we conducted additional analysis on the market composition of loans and their performance across the three states. We find several differences between the three markets. In California, only 2 percent of loans originated by CRA regulated institutions within their assessment areas were higher-priced, compared with 44 percent of loans originated by independent mortgage companies. In Ohio and Pennsylvania, around 10 percent of loans originated by CRA regulated institutions were higher-priced; the share for independent mortgage companies was around 32 percent. This suggests that in California, there was much greater product segmentation between CRA regulated institutions and independent mortgage companies.

In addition, serious delinquencies were more evenly distributed across lender types in Ohio and Pennsylvania. In California, only 3.3 percent of loans originated by CRA regulated institutions were in default as of December 2008, compared with 14.7 percent for affiliates and subsidiaries and 11.7 percent for independent mortgage companies, more than a three-fold difference. In Ohio, default rates for CRA lenders were 4.6 percent, while those for IMCs were 9.3 percent. In Pennsylvania, the difference in

default rates was only slightly significant, ranging from 3.2 percent for CRA lenders and 5.7 percent for IMCs. We attribute these differences to the different drivers of the foreclosure crisis in California versus weaker market areas such as Ohio and Pennsylvania, where unemployment may have played a larger role in the default decision than in California, where pre-2008 many of the foreclosures were driven by the collapse of the housing bubble (Foote et al. 2009). Although more research is needed to explore these dynamics, we believe that these findings demonstrate that there are significant geographic differences in how mortgage market channels interact with borrowers and local housing market conditions to shape loan outcomes, with attendant implications for consumer protection.

Conclusion

The findings presented in this chapter provide important insights into the relationships between local context, mortgage market channels, and loan performance. First, the chapter demonstrates that the CRA did not contribute to the subprime crisis. We find that institutions regulated under the CRA were significantly less likely to originate subprime loans than were other mortgage lending institutions, and that these protections were more important in lower-income communities. In this sense, we believe that loans made by CRA regulated institutions within their assessment area can be considered as “constructive credit” in LMI communities. The regulatory scrutiny that accompanies CRA assessment area lending provides an important layer of consumer protection in the mortgage market, and works to help to meet the credit needs of LMI communities in a manner consistent with safe and sound lending practices. This analysis provides additional evidence countering the claim that the CRA caused the subprime crisis, and suggests that in some important ways, the CRA was achieving the goals that its founders intended. We also find that in California, loans made by federally regulated depositories within their assessment areas performed significantly better than loans not covered by the CRA, even after controlling for borrower, housing market, and loan characteristics.

Yet, the analysis also suggests that the CRA needs to be revised as part of an overall framework for consumer protection. We think that there are at least four lessons to be learned from this research that could help to inform the debate about what the CRA should look like going forward. First, we find that there was considerable geographic variation in the coverage of CRA regulated institutions and their lending activities, variation that becomes even more pronounced when we look at within assessment area lending. In Ohio and Pennsylvania in particular, only a small share of the loans originated were made by CRA regulated institutions within their assessment areas, and that these loans were actually slightly more likely to be in foreclosure than loans made by independent mortgage companies. In part, this may be due

to the economic drivers of foreclosure in these states: lenders can't necessarily control foreclosures driven by unemployment. However, the fact that most of the higher-priced lending in LMI communities was driven by affiliates and independent mortgage companies is troubling, suggesting that just as in 1977, the credit needs of LMI communities are often served not by banks, but by other institutional lenders that were not subject to the same regulatory scrutiny. This dual mortgage market – and the fact that historically disadvantaged communities were predominantly served by those the least regulated – has important implications for the future of the CRA. Going forward, it seems reasonable that consumers should have equal access to the benefits of legally mandated federal oversight regardless of the institutional status of the lender (Essene and Apgar 2009). Yet our research also raises the question of how federal regulations – be it the CRA or other consumer protection laws – can be written in such a way to account for the very different mortgage and housing markets that exist across the United States. Adequate consumer protection in California may look different than adequate consumer protection in Ohio, which raises important policy questions around the balance of federal and state laws and preemption (Ding et al. 2010a; Ding et al. 2010b).

Second, our analysis highlights the importance of the “assessment area” in providing access to constructive credit. Among institutions regulated under the CRA, loans made within the institutions assessment area were significantly less likely to be subprime than those made outside of their assessment areas. More research is needed in order to understand if the effect is due to the increased regulatory scrutiny afforded to loans made within the assessment area boundaries, or whether there is a separate mechanism embedded within local branch presence and relationship lending that results in more positive outcomes for LMI communities. If it's the former, then expanding the definition of a bank's assessment area to include all the areas in which they do business—even if it's not branch based—could result in better loan outcomes. But emerging research on lending behavior has shown that local social relationships and networks affect who gets capital and at what cost (Uzzi 1999; Pittman 2008; Moulton 2008; Reid 2010), suggesting that there might be a need to create a network of local lenders even as bank consolidation and technological advancements push lending in the opposite direction. For example, community development financial institutions (CDFIs) already serve that function in some LMI neighborhoods; the combination of responsible loan products and financial education have led to very positive outcomes, even among borrowers with subprime credit profiles (Ding et al. 2008). Providing CDFIs with additional capital to play an expanded role in mortgage lending and reach more borrowers could be one way to create a network of local intermediaries who could respond to local conditions and social processes (e.g., developing different interventions in communities comprised largely of immigrants than in communities with historically African American residents). Alternatively, it might entail

expanding and strengthening the CRA in a way that encourages banks and other financial services institutions to reach out to underserved areas and that emphasizes the community aspect of lending even as assessment areas tied to bank branches become obsolete.

Third, the models show that there continue to be significant disparities in housing and mortgage market outcomes for African American and Hispanic borrowers. Minority borrowers were significantly more likely to get a subprime loan, even after controlling for borrower and neighborhood risk characteristics, and they were more likely to be in default. While some of these disparities are likely due to unobservable difference among racial and ethnic groups (e.g. wealth, intergenerational knowledge, language barriers), the models nevertheless show that significant portion of these disparities can be explained by the mortgage market channel. While more research is needed to understand the sorting of consumers among different types of mortgage lending institutions, equal access to fair credit won't become a reality as long as historically underserved borrowers are disproportionately served by subprime lenders. Despite the affirmative obligation to serve all communities under the CRA, prime lenders failed to effectively reach creditworthy minority borrowers. This suggests that there is a need to revisit the CRA within the context of fair lending laws and explicitly consider the role of race and ethnicity in discussions about policies to promote equal access to credit.

Finally, we believe there is a need to revisit the emphasis of CRA on mortgage lending, and to pay broader attention to the continuum of financial services that can help families move up the "credit path" before they climb up the housing ladder. Certainly, the current foreclosure crisis is due at least in part to borrowers receiving loans they couldn't afford despite evidence of low credit scores, low assets, and unstable income streams. Rather than focusing on making subprime credit widely available through risk-based pricing, we may need to instead focus on improving the borrowers' credit profiles, building relationships between consumers and responsible lenders by providing better access to mainstream financial services, and building a foundation for sustainable homeownership through savings and workforce development. While these options would entail public costs, these costs seem to be justified when weighed against the very real price we are paying as a result of the existing dual mortgage market.

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Figure 1: Sample Means

	California	Ohio	Pennsylvania
Local Socio-Economic Characteristics			
MSA House Price Appreciation 2 Years Prior to Origination	41.30	6.63	20.36
County Unemployment Rate at Origination	5.61	5.70	4.92
Average Appraisal Amount	590,617	194,976	215,840
Census Tract Median Unit Age (2000)	28.66	32.89	37.65
Census Tract Percent Minority Residents (2000)	31.72	9.01	9.71
Census Tract Percent with College Education (2000)	60.31	52.75	47.70
Census Tract Vacancy Rate (2000)	5.03	5.64	6.85
<i>FFIEC Census Tract Income Designation</i>			
Low Income Neighborhood	2.43	1.72	1.96
Moderate Income Neighborhood	16.90	10.65	12.63
Middle Income Neighborhood	39.93	51.12	53.04
Upper Income Neighborhood	40.69	36.49	32.36
Borrower Characteristics			
FICO at Origination	709.0	700.9	698.1
Income at Origination	124,629	73,612	76,325
<i>Race/Ethnicity of Borrower</i>			
White	55.70	88.98	89.80
Black	5.95	5.61	7.52
Hispanic	25.70	2.66	1.29
Asian	12.54	2.73	1.37
Loan Characteristics			
Average Loan Amount	366,392	146,793	156,781
Combined Loan to Value Ratio	84.75	78.11	76.49
Adjustable Rate Mortgage	55.87	25.18	20.03
Higher-Priced Loan	16.82	18.40	21.20
Prepayment Penalty	28.05	10.96	11.10
No Documentation	31.40	10.60	13.79
Seriously Delinquent	7.45	6.99	4.31
Mortgage Market Channel			
Wholesale	40.85	32.04	29.28
<i>CRA Regulated Institution</i>			
Within Assessment Area	52.35	14.00	10.50
Outside of Assessment Area	6.07	28.20	25.80
Affiliate or Subsidiary	17.45	31.27	33.19
Independent Mortgage Company	24.11	26.47	30.47

Figure 2: Logistic Regression Predicting the Likelihood of Receiving a Subprime Loan

	California				Ohio				Pennsylvania			
	Coefficient	Standard Error		Odds Ratio	Coefficient	Standard Error		Odds Ratio	Coefficient	Standard Error		Odds Ratio
Intercept	2.561	0.032	***		5.630	0.078	***		6.921	0.061	***	
Borrower Characteristics												
Black	0.464	0.007	***	1.59	0.743	0.013	***	2.10	0.528	0.013	***	1.70
Hispanic	0.236	0.005	***	1.27	0.520	0.019	***	1.68	-0.104	0.029	**	0.90
Asian	-0.073	0.007	***	0.93	-0.216	0.026	***	0.81	-0.940	0.041	***	0.39
Income	0.000	0.000	***	1.00	-0.007	0.000	***	0.99	-0.002	0.000	***	1.00
Risk Characteristics												
Loan to Value	0.023	0.000	***	1.02	0.027	0.000	***	1.03	0.024	0.000	***	1.02
Borrower FICO Score at Origination	-0.010	0.000	***	0.99	-0.012	0.000	***	0.99	-0.014	0.000	***	0.99
No Documentation	0.848	0.004	***	2.33	0.020	0.012		1.02	0.099	0.011	*	1.10
Local Socio-Economic Characteristics												
County Unemployment Rate at Origination	0.011	0.001	***	1.01	-0.009	0.006		0.99	0.033	0.004	***	1.03
MSA House Price Appreciation 2 Years Prior to Origination	0.020	0.000	***	1.02	-0.019	0.003	***	0.98	-0.004	0.000	***	1.00
Census Tract Percent with College Education (2000)	-0.010	0.000	***	0.99	-0.019	0.000	***	0.98	-0.020	0.000	***	0.98
Low-Income	0.312	0.013	***	1.37	0.497	0.026	***	1.64	1.015	0.029	***	2.76
Moderate-Income	0.284	0.008	***	1.33	0.386	0.016	***	1.47	0.654	0.018	***	1.92
Middle-Income	0.232	0.006	***	1.26	0.104	0.011		1.11	0.215	0.013	***	1.24
Mortgage Market Channel												
Wholesale	0.977	0.004	***	2.66	0.736	0.008	***	2.09	1.104	0.008	***	3.02
CRA Regulated Institution within Assessment Area	-3.511	0.007	***	0.03	-1.547	0.014	***	0.21	-1.610	0.015	***	0.20
CRA Regulated Institution Outside of Assessment Area	-1.250	0.008	***	0.29	-1.262	0.011	***	0.28	-1.493	0.011	***	0.23
Affiliate or Subsidiary	-1.286	0.005	***	0.28	-1.250	0.010	***	0.29	-1.191	0.009	***	0.30
Year of Origination 2005	1.019	0.006	***	2.77	0.493	0.009	***	1.64	0.439	0.010	***	1.55
Year of Origination 2006	1.905	0.007	***	6.72	0.922	0.014	***	2.51	0.834	0.011	***	2.30
Model Wald Chi-Square	623,549				118,353				133,699			
N	616,561				65,860				85,442			
*** p < .0001, ** p < .001, * p < .01												

Figure 3: Marginal Effect of CRA Assessment Variable on the Likelihood of Receiving a Subprime Loan



Figure 4: Percent of African American Borrowers with a Prime Credit Score Who Received a Subprime Loan

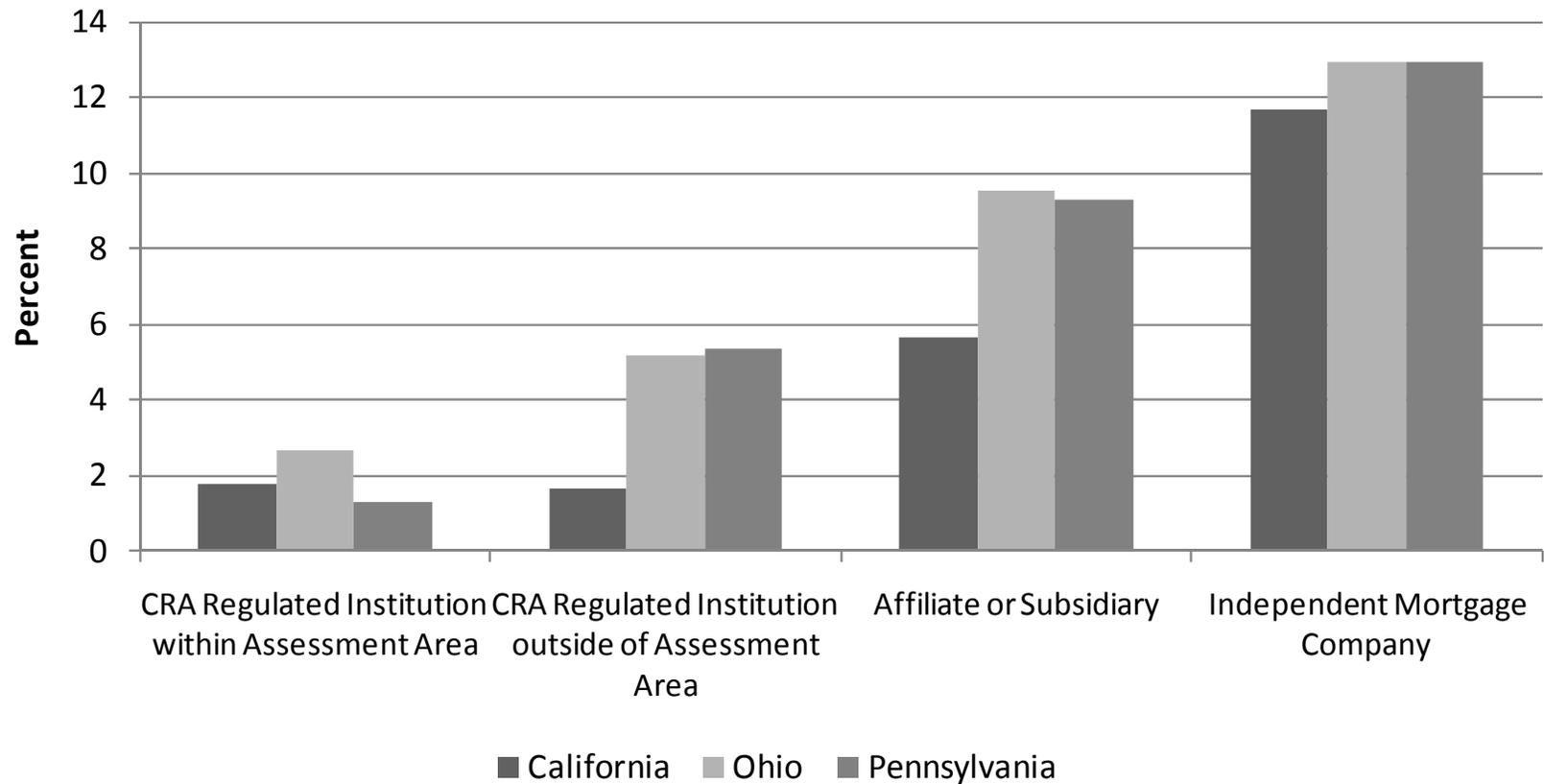


Figure 5: Competing Risks Model of Default and Prepayment

CALIFORNIA								
	Default				Prepayment			
	Coefficient	Standard Error		Relative Risk Ratio	Coefficient	Standard Error		Relative Risk Ratio
Intercept	2.202	0.060	***		18.731	0.063	***	
Borrower Characteristics								
Black	0.281	0.011	***	1.33	-0.374	0.016	***	0.69
Hispanic	0.564	0.007	***	1.76	-0.120	0.009	***	0.89
Asian	0.280	0.009	***	1.32	-0.067	0.010	***	0.94
Income	0.000	0.000		1.00	0.000	0.000	***	1.00
FICO Score at Origination	-0.008	0.000	***	0.99	0.002	0.000	***	1.00
Loan Characteristics								
Higher-Priced Loan	0.508	0.008	***	1.66	-0.496	0.013	***	0.61
Loan to Value	0.072	0.000	***	1.07	-0.019	0.000	***	0.98
Adjustable Interest Rate	0.965	0.008	***	2.63	0.890	0.008	***	2.44
No Documentation	0.475	0.006	***	1.61	-0.304	0.008	***	0.74
Prepayment Penalty	0.560	0.007	***	1.75	-0.106	0.010	***	0.90
Interest Rate	0.086	0.001	***	1.09	0.070	0.001	***	1.07
Loan Seasoning	-0.003	0.000	***	1.00	-0.017	0.000	***	0.98
Local Socio-Economic Characteristics								
County Unemployment Rate at Last Observation	0.015	0.002	***	1.02	-0.023	0.003	***	0.98
MSA House Price Appreciation 2 Years After Origination	-0.007	0.000	***	0.99	0.099	0.000	***	1.10
Census Tract Percent with College Education (2000)	-0.005	0.000	***	1.00	0.006	0.000	***	1.01
LMI Census Tract	-0.006	0.008		0.99	0.095	0.011	***	1.10
Mortgage Market Channel								
Wholesale	0.273	0.006	***	1.31	-0.084	0.007	***	0.92
CRA Regulated Institution within Assessment Area	-0.824	0.009	***	0.44	-0.101	0.010	***	0.90
CRA Regulated Institution Outside of Assessment Area	-0.264	0.014	*	0.77	-0.137	0.015	***	0.87
Affiliate or Subsidiary	-0.195	0.009	***	0.82	-0.044	0.011	***	0.96
Year of Origination 2005	-0.744	0.012	***	0.48	-3.320	0.011	***	0.04
Year of Origination 2006	-1.008	0.020	***	0.37	-5.856	0.021	***	0.00

* Competing risk outcomes are measured against loans still active and not seriously delinquent in December 2008.

*** p < .0001, ** p < .001, * p < .01

Figure 5: Competing Risks Model of Default and Prepayment (continued)

		OHIO							
		Default			Prepayment				
		Coefficient	Standard Error	Relative Risk Ratio	Coefficient	Standard Error	Relative Risk Ratio		
Intercept		8.418	0.117	***	13.380	0.114	***		
Borrower Characteristics									
Black		0.252	0.017	***	1.29	-0.331	0.026	***	0.72
Hispanic		0.041	0.028		1.04	0.093	0.033	*	1.10
Asian		-0.839	0.050	***	0.43	-0.172	0.029	***	0.84
Income		-0.004	0.000	***	1.00	0.000	0.000		1.00
FICO Score at Origination		-0.010	0.000	***	0.99	0.002	0.000	***	1.00
Loan Characteristics									
Higher-Priced Loan		0.407	0.014	***	1.50	-0.028	0.017		0.97
Loan to Value		0.036	0.001	***	1.04	-0.017	0.000	***	0.98
Adjustable Interest Rate		0.532	0.015	***	1.70	1.063	0.013	***	2.90
No Documentation		0.359	0.016	***	1.43	-0.258	0.018	***	0.77
Prepayment Penalty		0.705	0.018	***	2.02	-0.035	0.022		0.97
Interest Rate		0.063	0.002	***	1.07	0.063	0.002	***	1.06
Loan Seasoning		-0.006	0.000	***	0.99	-0.013	0.000	***	0.99
County and MSA Characteristics									
County Unemployment Rate at Last Observation		0.244	0.009	***	1.28	0.320	0.009	***	1.38
MSA House Price Appreciation 2 Years After Origination		0.138	0.003	***	1.15	0.374	0.003	***	1.45
Census Tract Percent with College Education (2000)		-0.006	0.000	***	0.99	0.005	0.000	***	1.01
LMI Census Tract		0.252	0.015	***	1.29	-0.421	0.021	***	0.66
Mortgage Market Channel									
Wholesale		0.334	0.013	***	1.40	-0.095	0.013	***	0.91
CRA Regulated Institution within Assessment Area		0.220	0.022	***	1.25	-0.173	0.019	***	0.84
CRA Regulated Institution Outside of Assessment Area		0.122	0.016	***	1.13	-0.147	0.016	***	0.86
Affiliate or Subsidiary		0.398	0.015	***	1.49	0.050	0.016	**	1.05
Year of Origination 2005		-1.639	0.020	***	0.19	-3.155	0.020	***	0.04
Year of Origination 2006		-3.072	0.036	***	0.05	-6.185	0.035	***	0.00

* Competing risk outcomes are measured against loans still active and not seriously delinquent in December 2008.

*** p < .0001, ** p < .001, * p < .01

Figure 5: Competing Risks Model of Default and Prepayment (continued)

PENNSYLVANIA									
	Default			Prepayment			Relative Risk Ratio		
	Coefficient	Standard Error	Relative Risk Ratio	Coefficient	Standard Error	Relative Risk Ratio			
Intercept	5.881	0.123	***		9.369	0.085	***		
Borrower Characteristics									
Black	0.190	0.020	***	1.209	-0.097	0.019	***	0.91	
Hispanic	-0.257	0.056	***	0.774	-0.229	0.044	***	0.80	
Asian	-0.005	0.060		0.995	-0.304	0.038	***	0.74	
Income	0.000	0.000		1	0.000	0.000	*	1.00	
FICO Score at Origination	-0.011	0.000	***	0.989	0.001	0.000	***	1.00	
Loan Characteristics									
Higher-Priced Loan	0.403	0.018	***	1.497	-0.410	0.015	***	0.66	
Loan to Value	0.033	0.001	***	1.033	-0.001	0.000	**	1.00	
Adjustable Interest Rate	0.409	0.020	***	1.505	0.694	0.013	***	2.00	
No Documentation	0.373	0.017	**	1.451	-0.051	0.013	***	0.95	
Prepayment Penalty	0.279	0.022	***	1.322	-0.881	0.022	***	0.42	
Interest Rate	0.054	0.002	***	1.055	0.092	0.001	***	1.10	
Loan Seasoning	-0.003	0.000	***	0.997	-0.010	0.000	***	0.99	
County and MSA Characteristics									
County Unemployment Rate at Last Observation	0.070	0.008	***	1.072	0.197	0.005	***	1.22	
MSA House Price Appreciation 2 Years After Origination	0.009	0.001	***	1.009	0.083	0.001	***	1.09	
Census Tract Percent with College Education (2000)	-0.009	0.001	***	0.991	0.004	0.000	***	1.00	
LMI Census Tract	0.010	0.020		1.01	-0.111	0.016	***	0.90	
Mortgage Market Channel									
Wholesale	0.495	0.016	***	1.641	0.130	0.011	***	1.14	
CRA Regulated Institution within Assessment Area	0.119	0.027	***	1.126	-0.331	0.017	***	0.72	
CRA Regulated Institution Outside of Assessment Area	-0.050	0.021		0.951	-0.177	0.013	***	0.84	
Affiliate or Subsidiary	-0.008	0.019		0.992	-0.354	0.013	***	0.70	
Year of Origination 2005	-1.171	0.023	***	0.31	-2.813	0.016	***	0.06	
Year of Origination 2006	-1.646	0.043	**	0.193	-4.446	0.029	***	0.01	
* Competing risk outcomes are measured against loans still active and not seriously delinquent in December 2008.									
*** p < .0001, ** p < .001, * p < .01									