The Honeymoon is Over:

Same Sex Applicants in the Mortgage Market

and the Effectiveness of State Anti-Discrimination Laws

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**Abstract:** Although recent court decisions have increased the number of states with marriage equality, state legislatures retain power over who is protected from discrimination when seeking housing. 21 states and D.C. have anti-discrimination laws in place which are meant to prevent unfair treatment for same sex couples. Using hundreds of thousands of mortgage applications from 2007 to 2013 in Washington D.C., St. Louis, and Delaware, this study shows that same sex applicants do receive loans at an origination rate lower than opposite sex applicants. State and local anti-discrimination laws do results in less disparity between the sets of applicants, but inequality persists.

A key feature of democracy is civil rights and equal treatment. It is rarely that case especially in the United States that minority groups are immediately treated equally. More commonly, these groups form political constituencies and gather political clout to get legislatures to pass laws which affirm equal treatment.

This process played out in the 1950s and 1960s with African Americans and now it continues with the lesbian and gay community. Marriage equality has garnered most of the attention, but there are other areas in which the LGBT community fights for protection from discrimination such as employment, adoption, and housing. Increasing political clout has led to more legal and policy action. One important facet is housing.

Choosing where to live is usually a long term commitment in the United States. People typically associate getting a mortgage, possibly a 10 to 30 year-long agreement, with part of the American Dream. People often choose very carefully when buying a house compared to renting. Although federal law protects many groups against housing discrimination, it is up to states and local governments to extend protections based on sexual orientation. It leaves open the possibility that as same sex couples attain marriage recognition, they will also face discrimination when trying to live together. Less than half of states but many large cities have expanded legal protection to same sex couples in housing. These anti-discrimination laws intend to ensure that same sex couples are not discriminated against when they rent or buy a home.

This study seeks to answer some of the basic questions of housing, same sex couples, and state laws. Is there a disparity in loan origination for same sex and opposite sex applicants? It is important to establish whether the different couple combinations actually receive loans differently or not. Another question is the effectiveness of state and local anti-discrimination laws. Do these laws erase the disparity between the sets of couples? If these laws are indeed generating equality, it affirms the ability of legislation to protect minority groups in representative government. A last question is whether these laws are the cause or are merely correlated with more equality. It is possible that fair housing laws are signals of an environment that is less discriminating in the first place. Rather than legislating equality, the laws are signals of political gains and favorable conditions for more equal treatment.

Using housing data from 2007 to 2013 and a regression discontinuity setup, this study finds evidence that same sex couples do indeed have less probability of receiving loans. The evidence is more mixed on the effectiveness of state laws. There is a lower disparity between same sex and opposite sex applicants in areas with fair housing laws, but the two groups still have inequalities even in anti-discrimination areas. Furthermore, it is doubtful that anti-discrimination laws themselves alone are the cause of more equality.

**Theory**

Many groups in the United States have experienced periods of discrimination in civil society. When it comes to housing, most people associated discrimination with racial and ethnic groups. Although discrimination against racial groups has decreased and become more subtle, it continues for both minority buyers and renters (Danielson 1976, Turner et al. 1991, Jones-Correa 2001, Lamb 2005). Racial minorities were denied loans or pushed to live in certain neighborhoods.

The passage of the Home Mortgage Disclosure Act in 1975 was intended to reduce this type of racial discrimination. Law growing from the Fourteenth Amendment made it clear that racial discrimination in housing was illegal. With better data collection under the HMDA, some of the discriminatory practices would be more clearly identifiable and rectifiable with the use of litigation (CITATIONS IN HERE).

Under federal law, many groups are protected classes when looking for housing. It is therefore illegal to discriminate against renters and buyers based on race, national origin, sex, religion, disability, or familial status[[1]](#footnote-1) (http://portal.hud.gov/hudportal/HUD?src=/topics/housing\_discrimination). One possible source of discrimination not included in this list which has grown more noticeable over time is sexual orientation. Current federal law does not protect against discrimination based on sexual orientation. States, counties, cities, and municipalities can pass their own laws and ordinances to expand the protection to sexual orientation, leaving a patchwork of areas across the country where anti-discrimination laws are in effect to protect lesbian, gay, bi-sexual, and transgender renters or buyers. Unlike racial discrimination in housing however, there are states and areas where the government has no power to prevent housing discrimination against LGBT renters or buyers. A recent HUD report used an experiment to show that same sex renters are likely to face greater rejection rates (HUD) but it seems that no large scale study of discrimination in the home mortgage market has yet been conducted.

Since it is up to states and local governments to pass protections for LGBT renters and homebuyers, it is reasonable to expect these laws to exist in communities with sizeable LGBT communities. Officials in areas with a large LGBT constituency are likely to be pressured by this group to put anti-discrimination laws on the books. At the state level, 21 states and D.C. have a statewide law protecting against discrimination based on sexual orientation. These states are concentrated in the Northeast, Upper Midwest, and West Coast. Nearly all these states have a liberal tilt and regularly vote “blue” in presidential elections, leading to a question about the effectiveness of these state laws. Do these laws rectify a problem of discrimination or merely signal the existence of an effective interest group? It might be difficult to sort out whether discrimination in the states with fair housing laws is due to the law itself or a more tolerable atmosphere at large. One way to assess this is to use a regression discontinuity approach where one city which straddles two different housing law regimes is analyzed to see if same sex applicants are more successful in the state or area with anti-discrimination laws.

**Data**

Banks and government agencies involved in the mortgage market are required by the HMDA law to report information about the loan applications they receive (CITATION). Since millions of applications are filled out each year, the dataset constitutes around 130 million loan applications from the years 2007 to 2013 inclusive (www.consumerfinance.gov/hmda/). The data include all states over the time span, giving a great reservoir for analysis.

The HMDA data contain many useful variables. On the applicant level, the data include sex, race, and ethnicity for each applicant and co-applicant. Income is also available for the application overall, not for each applicant individually. The amount of the loan applied for, whether the loan is from a bank or a government agency, the purpose of the loan, and whether the loan was originated or denied are all also available.[[2]](#footnote-2) The data also include information on the neighborhood of the property for which the loan is sought. The property is identified to be within a census tract. The type of property (house, multi-family dwelling, or manufactured housing), the number of housing units available, population, minority population and income to metro area ratio are available by tract for the property. A codebook accompanying the data is attached as Appendix A.

The inclusion of applicant sex and co-applicant sex in the data allows comparison across different couple combinations. Applications can be single, opposite sex, or same sex.[[3]](#footnote-3) Taking advantage of the applicant and co-applicant designation creates further categorization. There can be single males, single females, male-led opposite sex, female-led opposite sex, male same sex, and female same sex applications. In addition to these categories, there is an ‘other’ category for situations in which the sex of one applicant remains unreported for unknown reasons.[[4]](#footnote-4)

The HMDA dataset establishes the basis for many of the comparisons that can be made for loan applicants by couple combination. One variable that is absent is credit score and assets. Banks and government agencies likely take these into consideration, but go unreported for the HMDA data, limiting the ability to compare applicants more fully.[[5]](#footnote-5) However, income should stand as a good proxy for understanding the economic situation of applicants.

Data on anti-discrimination laws is not as accessible as loan application data. Some groups such as the Human Rights Campaign gather on laws by state and large cities but not for every county, city or municipality (CITE HRC). In order to deal with this data shortfall, this study looks at metro areas which are situated between multiple states where one state has a housing anti-discrimination law and another state does not. Cities, counties, and municipalities also can have anti-discrimination laws so these are also taken into account. The regression discontinuity approach should reveal possible differences in the rates of origination of loans for different couple combinations.

Lastly, the census provides useful demographic data specifically for same sex couples. The census documents the amount of people of the same sex living together, the best and most widespread accounting of the number and location of gay and lesbian populations. This information serves as a signal to both same sex applicants and banks. Gay and lesbian applicants might apply to these neighborhoods in greater numbers but banks might also push them to live in these areas. It is possible to assess the success and failure rate of same sex applicants to areas according to the size of the same sex population already living in that area.

**Model and Results**

There are various aspects of housing, same sex couples, and state laws to explore. On the most basic level, it is important to understand the differences in rates of loan origination for the different possible couple combinations. Do same sex applicants get loans in fewer numbers than opposite sex applicants? To answer this, I will use a logit model controlling for previous discussed neighborhood and individual variables.

Another area of interest is the effect of state laws on the different couple combinations. If the laws are working as intended, same sex applicants should be receiving loans at a similar acceptance rate as opposite sex couples. In order to model this properly, I use interactions between anti-discrimination laws and the different couple combinations:

Loan Originated (1 or 0) = β0 + β1 Minority Population + β2 Tract to City Income Ratio

+ β3 Percent Same Sex + β4 Anti-Discrimination Law

+ β5 Logged Income + β6 Logged Loan Amount

+ β7 Loan Type + β8 Couple

+ β9 Couple\*Anti-Discrimination Law + ε.[[6]](#footnote-6)

The interaction term should give insight into whether or not state laws against same sex housing discrimination actually have an impact. The term should be positive for same sex couples. I don’t have an expectations for its effects for opposite sex couples, single applicants, or others.

I apply the models to three different sets of data in regression discontinuity setups. The first set of data is from Washington D.C. from 2007 to 2013 and includes over half a million loan applications filed over the time period. Washington D.C. is desirable because it straddles Maryland, Virginia, and West Virginia. Maryland and D.C. have anti-discrimination housing laws while Virginia and West Virginia lack them, however Alexandria City in Virginia does have a local ordinance.

Out of the 550,000 or so applications, just over 200,000 fall into areas with a fair housing law. Table 1 contains summary information on the loan applications by couple type. The median income and loan amount for each group is displayed. Same sex applicants make less than opposite sex couples but also apply for smaller loans. Same sex applicants also apply for conventional bank loans at a percentage lower than all the other groups. They are successful in receiving loans at a percentage comparable to single applicants but lower than opposite sex couples.

Table 2 shows the results of the D.C. models. The first model doesn’t include an interaction term, the second model does, and the third model further breaks out the possible couple combinations and does not include interaction terms. Neighborhood effects like minority population and tract income are significant but the coefficients are very small while percent same sex in a county is positive. On the individual level, income and loan amount are positive and significant while seeking a conventional loan is negative and significant. These variables keep their sign, significance, and are nearly the same size across model specifications.

The coefficient for anti-discrimination laws is negative and significant. When it comes to the couple groups, opposite sex applicants have the largest coefficient followed by single applicants and then same sex applicants. The ‘other’ group is used as the reference category for these regressions. Looking at the interaction terms in model 2, only same sex applicants have a positive coefficient and it is significant. Opposite sex applicants have a negative interaction term coefficient and it is not significant. Single applicants also have a negative interaction coefficient and it is slightly significant. The interaction terms suggest that same sex applicants are affected most by the presence of an anti-discrimination law in a jurisdiction, just as we would expect if the law is working as intended. Model 3 in Table 2 gives further support that the model behaves as expected. Male led opposite applications have the largest coefficients while same sex applicants of both sexes have noticeably small coefficients compared to the ‘other’ reference category.

Model 2 in Table 2 gives some evidence that anti-discrimination laws are working as intended. It is useful to look at predicted probabilities of receiving a loan across the couple combinations. Table 3 shows the predicted probabilities, their 90% percent confidence intervals, and differences of interest. The predicted probabilities are based on the coefficients from model 2 with neighborhood and individual effects set at their medians in an area with a fair housing law for applicants seeking a conventional loan. Opposite sex couples are predicted to receive loans at a percentage distinguishably higher than same sex applicants and single applicants.

The D.C. results also present an interesting picture for the effectiveness of fair housing laws. Although the interaction terms behaved as expected, the first difference for same sex couples applying to a fair law area versus an area without a fair housing law is negative and significant from zero. This indicates that same sex applicants actually have a harder time getting loan in areas with a fair housing law, although the probability difference is not large. However, Table 3 also shows that opposite sex applicants have a larger advantage over same sex applicants in areas without a fair housing law. The second difference illustrates that opposite sex applicants in areas without a fair housing law have a significant advantage over same sex couples.[[7]](#footnote-7) It is somewhat of a messy picture, but overall the anti-discrimination looks to at least help somewhat in reducing the disparity in loan origination rates between same sex and opposite sex applicants.

The second set of data comes from St. Louis. Regression discontinuity works for the St. Louis metro area because Illinois, St. Louis City, and St. Louis County have laws for fair housing while Missouri does not. Out of the over 250,000 applications between 2007 and 2013, 181,730 are made in areas with a fair housing law.

Table 4 gives summary statistics for applications in St. Louis. The percentage of the couple types is similar to D.C. as are many other trends. Median opposite sex income is more than same sex income, but by a smaller margin. Same sex applicants seek loans in amounts closer to what single applicants want. Same sex applicants and single applicants also apply for conventional loans and have origination rates that are similar to each other. Given the income disparity between single and same sex applicants, there should be more similarities between opposite sex applicants and same sex applicants.

The logit results for St. Louis are in Table 5. Many of the results are similar to D.C. with the neighborhood and individual level variables having the same sign. One notable exception is the fair housing law. While it was negative in the D.C. models, it is positive across the three models for St. Louis. The interaction terms for St. Louis are all positive and none are significant. The coefficients in model 3 for the 6 couple combinations is more muddled than for D.C. It appears that female led opposite sex applications actually do worse than same sex applications.

What do the changes mean for predicted probabilities and differences? Table 6 shows that opposite sex applicants are more likely to receive loans than same sex and single applicants, which are both very similar. The first difference for opposite sex versus same sex applicants in fair housing areas shows a positive and significant difference in favor of opposite sex applicants. Opposite sex applicants maintain their advantage in areas without fair housing laws. However, the second difference across the two couple combinations and law regimes is not significant. Table 6 shows that same sex applicants have a higher predicted probability of receiving a loan in fair housing law areas compared to areas without these laws and the difference is significant.

Overall the D.C. and St. Louis models give mixed evidence for the effectiveness of fair housing laws. It is clear that opposite sex applicants have a higher chance of receiving a loan than same sex applicants. This conclusion is supported by predicted probabilities and first differences in models for both cities. The interactions terms in the D.C. model give support to fair housing laws impacting same sex applicants specifically, but the first difference indicates that same sex applicants actually experience a slightly lower probability of loan origination in fair housing law jurisdictions. In St. Louis, the difference does support the hypothesis that same sex couples have a better chance of receiving a loan in protected areas.

A last way to determine the effects of state anti-discrimination laws is to take advantage of a regression discontinuity across time. Delaware expanded its state anti-discrimination laws in 2009 to protect same sex couples in housing. Utilizing discontinuity over time might help to eliminate some of the concerns of using geographical discontinuities. Same sex applicants in D.C. and St. Louis might apply to protected areas and a low number of applicants to areas without laws might hide the effects of such laws. By using a whole state with a temporal discontinuity, same sex couples have fewer geographical choices to make and probably did not choose when to apply for a loan based on state fair housing laws alone. One drawback however is that Delaware is a decently liberal state so that rampant discrimination against same sex couples may have never really been a concern.

As with the other data sets, Table 7 shows summary statistics for the 82,000 new home loan applications filed in Delaware. I code years 2007 to 2009 inclusive as years without a fair housing law and years 2010 to 2013 inclusive as fair housing years. Applications are thus divided nearly evenly for legal regimes for all applicants and same sex applicants.

Table 8 shows the logit results for Delaware. The variables for neighborhood and individuals have the same sign as the models for the cities. The dummy for fair housing law is positive but only significant in model 2. For the interactions in model 2, the only significant coefficient is for opposite sex applicants and it is negative. Table 9 shows the predicted probabilities based off the results from model 2. Same sex applicants are less likely to get loans compared to opposite and single applicants, which are very similar in this case. Opposite sex couples have an advantage over same sex applicants in years with and without fair housing laws.

The difference for same sex applicants in fair housing law years versus non-fair housing law years is nearly zero. The confidence interval clearly shows that the difference in before and after the law is not statistically significant. This indicates that the passage and signing of the law did not impact the likelihood of same sex applicants to receive loans. This is despite the existence of noticeable difference between the two couple combinations in the probability of loan origination. It appears that even in a state like Delaware the passage of a fair housing law does not alter the mortgage market very much. The opposite sex applicant advantage continued nearly completely unabated.

**Discussion**

The three areas analyzed demonstrate the barriers same sex applicants face when applying for mortgages. Opposite sex applicants have a higher probability of receiving a loan even when controlling for individual and neighborhood characteristics. Even though same sex applicants have incomes similar to opposite sex applicants, they are as successful in receiving loans as single applicants, which have much lower median incomes.

The effectiveness of state laws is less clear but mostly shows that same sex couples are better off when applying for loans in areas with anti-discrimination laws. The results from Delaware cast doubt on the idea of fair housing laws being able to cause better outcomes for same sex applicants, but St. Louis and D.C. show that these laws do reduce the disparity in loan origination rates between same sex and opposite sex couples.

Based on the results, it appears that anti-discrimination laws are a good signal for same sex applicants. Areas with these laws have lower differences in loan origination rates between couple types. Passage of fair housing laws might signal that a jurisdiction is less likely to discriminate against same sex applicants. Same sex applicants perform better in these areas because banks there and the people making loan decisions mostly support fair housing laws. Delaware indicates that this is probably the more likely scenario. A difference in origination rates between the couple combination persists, but the law itself does not change much.

Rather than the existence of a fair housing law in an area, it might be more useful to consider how people in an area feel about LBGT issues such as marriage and equality. Local attitudes and their change over time might serve as a better indicator of how well same sex applicants will do on the mortgage market as compared to opposite sex applicants.

**Conclusion**

This study has clearly demonstrated how same sex applicants fair worse in the mortgage market as compared to opposite sex applicants. Despite out earning single applicants, same sex applicants are usually about as likely to receive loans as single people. Although anti-discrimination laws aimed at helping reduce this disparity seem to be partly achieving this goal, it is doubtful that they are the cause behind same sex applications performing better in fair housing areas.

The discussion in this study highlights and important question; what is the relation between public opinion and civil rights laws? Although law promoting equality and fair treatment for minority groups are often hailed as capstone achievements, are the law really effective themselves or do they just serve as signals that discrimination against a certain group has already declined? These are important questions when considering minority groups, civil rights laws, representation, and democracy. The current upward progression of LGBT rights and the availability of housing data can help to determine how changing attitudes relate to real change in wider society.

There are many paths forward for further research. First, there is an obvious need to analyze data from more cities and states. Similar results with more data can help sort out some of the results found so far with this study. A second path is to add in public polling data on attitudes toward the LBGT community. It will make it more clear about how public opinion and societal change relate. Recent progress in multilevel regression with post-stratification provide a methodology for this strategy (Lax and Phillips 2009, Warshaw and Rodden 2012, Tausanovitch and Warshaw 2013). Another option forward is better drill down on where same sex applications are made geographically. Do people choose to live near like communities and how do these communities aggregate into political opinion. Would an influx of same sex applicants change opinion and law in an area. On the other hand, do banks and government agencies try to influence where these communities exist? Are banks more likely to approve same sex applications to areas with a strong existing LBGT community? The housing data allow us to examine many of these issues.

1. Familial status relates to whether or not one has children or not. [↑](#footnote-ref-1)
2. This study specifically looks at loans for new home purchases. [↑](#footnote-ref-2)
3. One might argue that not all same sex applications are made by couples who are gay or lesbian. For example, a father and son might apply to buy a house. However, it is unclear to me how much information from a loan application makes its way up the mortgage bureaucracy, meaning that a bank or government official who makes the decision on whether or not to grant a loan may not see the names on the application. If a loan officer can see that two people of the same sex have a common last name, the judgment that it is a gay or lesbian couple is further complicated by expanding marriage equality, meaning that people with a common last name could in fact be a married homosexual couple. Considering the percentage of overall same sex applications and the long term commitment a mortgage signifies, I would expect that most same sex applications are made by same sex couples. [↑](#footnote-ref-3)
4. An applicant failing to provide sex on an application leads to some considerations. First of all, the applicant could be doing so in order to avoid appearing as a same sex application. For the time being I code all cases of where the lead applicant did not provide sex as ‘other’. The data could be better analyzed to tease out these potential situations and multiple imputation could be used to better utilize the data. Another concern is again how much the determining bank or government official knows. If the official can see the names, then she could make an informed determination of the sex of the applicant even if sex wasn’t explicitly provided. But the data do not clearly reveal cases where no name and no sex were provided. It is therefore difficult to know how much a loan official could infer to make possibly discriminatory decisions. [↑](#footnote-ref-4)
5. It is also difficult to think of why credit score and assets would vary in a structural way for same sex applicants as compared to opposite sex applicants. I have no reason to suspect that credit scores especially would be better for opposite sex applicants over same sex applicants. [↑](#footnote-ref-5)
6. The model does not include fixed effects for time and county. Doing so would introduce collinearity since the existence of anti-discrimination laws does not change during the time frame in the associated counties. Random effects could overcome the problem, but results in intractable computational problems for the time being (R terminates itself). It might be necessary to use panel corrected standard errors in a situation like this, but I did not. [↑](#footnote-ref-6)
7. Second difference calculated as: Second Difference = (Pr(Opposite in no fair) – Pr(Same Sex in no fair))- (Pr(Opposite in fair) – (Pr(Same Sex in fair)) [↑](#footnote-ref-7)