Measuring the Effects of *Obergefell v. Hodges*: Revisiting Same-Sex Marriage Legalization and Mortgage Demand.*

May 30, 2025

Abstract

Abstract: The U.S. Supreme Court's 2015 ruling in *Obergefell v. Hodges* made same-sex marriage legal in all states. We estimate the effect of this landmark ruling on the mortgage demand of same-sex couples. Using data on the near universe of mortgage applications, we employ a difference-in-differences estimation strategy that compares the mortgage demand from same-sex and different-sex couples, before and after the ruling. We find that the ruling increased the mortgage demand from same-sex couples relative to different-sex couples by 12% in states where same-sex marriage was previously unavailable. Interestingly, we also estimate a 15% increase in the mortgage demand of same-sex couples in states that had already legalized same-sex marriage prior to the ruling. This suggests that the federal Supreme Court ruling brought greater certainty to same-sex couples, even in states where same-sex marriage was already legal. Additionally, we find that the effects were significantly larger for same-sex female couples compared to same-sex male couples, consistent with prior literature documenting higher marriage take-up among women in same-sex relationships. Our results emphasize the importance of federal Supreme Court rulings over and above similar state-level legislation in shaping outcomes of vulnerable populations.

JEL codes: J12, R21, R28

Keywords: Obergefell, same-sex marriage legalization, Mortgage Demand

*The authors have no conflicts of interest to declare that relate to the research described in this paper.

1 Introduction

The Unites State Supreme Court's 2015 decision in *Obergefell v. Hodges* was a landmark ruling in favor of marriage equality, legalizing same-sex marriage across all fifty states. It affirmed the constitutional right of same-sex couples to marry and to enjoy the same marital benefits as opposite-sex couples, including spousal health insurance, survivor benefits, hospital visitation rights, spousal testimony privileges, and divorce protection. Some of these benefits may incentivize homeownership among same-sex couples. For example, access to survivor benefits provides clarity on property transfer after death, simplifying tax preparation, and creating a formal contract that specifies how assets will be distributed in the event of divorce (Miller and Park, 2018). There is also evidence that same-sex marriage legalization may have affected the formation and take-up of monogamous relationships.[1] An increase in the number of same-sex couples in committed relationships increases the pool of potential same-sex home buyers, increasing the demand for mortgage credit.

While the ruling had a direct impact on the LGBTQ+ population in states where same-sex marriage had not been previously legalized, it also had significant implications for the LGBTQ+ community in states where same-sex marriage was already legal. First, it provided legal certainty to same-sex couples that their right to marriage would not be repealed.[2] Second, legally married same-sex couples gained access to federal marital benefits following the repeal of the Defence of Marriage Act (DOMA) in 2013. These include federal joint tax filing, eligibility for spousal social security benefits, and the ability to sponsor a spouse for immigration. The *Obergefell v. Hodges* ruling provided additional clarity on the federal benefits available to

[1] There are several studies which find that access to legal same-sex marriage reduces rates of sexually transmitted infections (Nikolaou 2023a; Nikolaou 2023b; Dee 2008).

[2] After becoming one of the first states to issue marriage licenses to same-sex couples, in November 2008, California voted to add a state constitutional amendment banning same-sex marriage.

same-sex couples.[3] Third, it led to shifts in public perceptions of the LGBTQ+ community, enhancing their well-being and potentially impacting partner formation decisions (Flores et al., 2020; Kazyak and Stange, 2018).

Homeownership is widely considered an integral part of the 'American Dream' as it offers financial gains and the opportunity to build wealth (Goodman and Mayer, 2018). Prior research also underscores the significance of homeownership as a pivotal instrument for consumption smoothing (Sodini et al., 2016). Moreover, many have argued in favour of supporting homeownership as a means to combat racial inequality.[4]

Previous work exploits the rollout of same-sex marriage across U.S. states and finds that early marriage legalization increases the number of applications for mortgages from same-sex couples relative to different sex couples (Miller and Park, 2018). However, it remains unclear if states that legalized same-sex marriage as a result of the *Obergefell v. Hodges* ruling would experience similar effects. States which legalized same-sex marriage prior to the 2015 ruling ('Early Legalization States') are systematically different from states which legalized same-sex marriage as a result of the ruling ('Obergefell States'). The former tend to have a larger number of same-sex couples and may have different underlying demand for same-sex marriage and mortgage credit among same-sex couples.[5]

We estimate the impact of the *Obergefell v. Hodges* ruling on mortgage credit using the Home Mortgage Disclosure Act (HMDA) data. Although HMDA data does

[3]Due to the short period of time between the repeal of DOMA in 2013 and the *Obergefell v. Hodges* ruling in 2015, we are unable to rule out that the effects documented in this study are contaminated by the 2013 repeal of DOMA. We argue that the repeal of DOMA is inextricably linked to the 2015 Supreme Court ruling. We emphasize the role of the 2015 ruling because of its relative salience. Regardless of which ruling is driving our results, our findings underscore the importance of Supreme Court rulings in shaping the lives of vulnerable populations.

[4]In 2003, President George W. Bush signed the American Dream Downpayment Act to assist first time homeowners in obtaining a downpayment framing homeownership as a way to combat racial inequality (Goodman and Mayer, 2018).

[5]Table 2 depicts demographic characteristics of states by legalization year and shows that Early Legalization States have a significantly larger number of same-sex couples as well as a larger number of applications from same-sex couples.

not allow us to directly observe the sexual orientation of mortgage applicants, we follow prior research and assume that applications in which the applicant and co-applicant belong to the same-sex, represent same-sex couples (Miller and Park, 2018; Hagendorff et al., 2022; Sun and Gao, 2019). Although this method is an imperfect proxy of the demand for mortgages from same-sex couples, we argue that it credibly allows us to identify applications from same-sex couples.[6] Since we observe the near universe of home mortgage applications, we consider the number of applications from same-sex and different-sex couples as the best available measure of their mortgage demand.

Given recent advancements in the difference-in-differences literature, we first re-estimate the effects of same-sex marriage legalization on mortgage demand for same-sex couples in Early Legalization States using an updated estimator that is robust to staggered treatment timing and treatment effect heterogeneity (Borusyak et al., 2021). We use a triple difference estimation strategy where we compare the number of mortgage applications from same-sex and different-sex couples across spacial and temporal variations in same-sex marriage legalization. We verify that our estimates are similar to Miller and Park (2018). Thereafter, we estimate the effects of the 2015 *Obergefell v. Hodges* ruling on mortgage demand. Although seventeen states experienced a change in legalization status as a result of the ruling, prior research has not specifically examined the effect of *Obergefell v. Hodges* on mortgage demand. In the absence of untreated states, estimating the effects of the ruling requires additional care.[7] In order to estimate the effects of same-sex marriage legalization in Obergefell States, previous literature often treats Early Legalization States as a

[6]This method is imperfect because we do not observe cash purchases of homes as well as loans from smaller lenders. We also undoubtedly misidentify some individuals as same-sex couples who may be applying for loans together for other reasons. We are also unable to identify all couples who are purchasing homes because some may not apply for loans jointly and we are unable to discern their relationship status or sexual orientation.

[7]After 2015, all states had legalized same-sex marriage.

control group (Nikolaou, 2023a). Although researchers acknowledge the limitations of this approach, as it ignores the dynamic effects of treatment over time, it may be particularly problematic when estimating the effects of same-sex marriage legalization because the 2015 federal ruling may affect same-sex couples living in Early Legalization States who are serve as the control group. If the effects of the ruling on states which did not offer same-sex marriage and states that had previously legalized same-sex marriage are in the same-direction, this method would yield an estimate that is biased downwards.

We avoid this problem by estimating the effect on Early Legalization States and Obergefell states separately. We conduct a difference-in-differences analysis where we compare mortgage applications for same-sex and different-sex couples before and after the ruling in Obergefell states as well as Early Legalization States. We find that the *Obergefell v. Hodges* ruling increased mortgage applications from same-sex couples relative to different sex couples by approximately 12 percent in Obergefell States and 15 percent in Early Legalization States. In line with literature documenting a greater same-sex marriage take-up amongst women compared to men, we find larger effects for same-sex female couples compared to same-sex male couples (Carpenter and Gates, 2008; Badgett and Mallory, 2014a; Ramos et al., 2009). We then conduct an analysis at the county level and find that the estimated effects are driven almost entirely by changes in metropolitan counties.

We contribute to a growing literature exploring the effects of same-sex marriage legalization on outcomes for same-sex couples. Previous research has explored the effects of same-sex marriage legalization on adoption decisions, discrimination, family formation, health insurance, income tax collections, labor force participation, marriage take-up, mental health, migration, partnership stability, public opinions on LGBTQ+ populations, and sexually transmitted infections (Martin and Rodriguez, 2022; Sansone, 2019; Trandafir, 2015; Carpenter et al., 2021; Carpenter et al., 2023;

(Alm et al., 2014; Friedberg and Isaac, 2022; Dillender, 2015; Hansen et al., 2020; Isaac, 2023; Carpenter, 2020; Mark Anderson et al., 2021; Chen and Van Ours, 2022; Beaudin, 2017; Chen and van Ours, 2020; Blasco et al., 2022; Francis et al., 2012). Much of this research is based on the staggered roll-out of same-sex marriage across U.S. states prior to the *Obergefell v. Hodges* ruling. By focusing on state-level policy changes, prior research misses meaningful dimensions of national policies shaping the welfare of sexual minorities.

This is the first paper to estimate the effect of the *Obergefell v. Hodges* ruling on mortgage credit. Specifically, we innovate in separately estimating its effect on states that already had similar state-legislated same-sex marriage and states that did not. This approach highlights how a Supreme Court ruling can influence individual behavior above and beyond the effect of comparable state legislation. We believe that this analysis is informative not only in the studied context, but could also shed light in other similar contexts, especially in the current legal climate, where court rulings roll back federal protections such as the right to abortion and Title IX protections for LGBTQ+ students.

Understanding the effects of this specific Supreme Court ruling is particularly relevant given increased fears that the ruling may be overturned due to the recent overturn of Roe v. Wade and a statement by Supreme Court justice Clarence Thomas arguing that the Supreme Court should "reconsider" its past rulings codifying rights to contraception access, same-sex relationships and same-sex marriage (Politico-Legal, 2022).

2 Background

Although there had been attempts at legalizing same-sex marriage since the 1970s, no major developments in favor of same-sex marriage legalization occurred until 1993

when the Supreme Court of Hawaii ruled that the state's prohibition on same-sex marriage was unconstitutional. However, the ruling was met with immediate opposition at the federal level, with President Bill Clinton signing the Defense of Marriage Act (DOMA) into law in 1996. DOMA defined marriage as a union exclusively between one man and one woman.

Thereafter, several states attempted to provide same-sex couples with legal recognition. In 1999, California became the first state to recognize same-sex couples with its statewide domestic partner registry. Several states followed suit, offering similar domestic partnership or civil union options to same-sex couples, as the movement for legal recognition of same-sex relationships gained momentum across the United States. In 2004, Massachusetts became the first state to legalize same-sex marriage. It was followed by Connecticut in 2008 and Vermont in 2009. California legalized same-sex marriage in 2008 and then repealed it later that year. Thereafter, states continued to legalize same-sex marriage through either judicial decisions, legislative actions, or referendums.

Table 1 lists the year when same-sex marriage was legalized in each state as well as the method of legalization. We categorize states into Earliest Legalization States, Expanded Early Legalization States and Obergefell States. The Earliest Legalization States are states that legalized same-sex marriage prior to 2012.[8] Expanded Early Legalization States are states that legalized same-sex marriage after 2011 but before the *Obergefell v. Hodges* ruling and the Obergefell States are all states which legalized same-sex marriage in 2015 as a result of the *Obergefell v. Hodges* Supreme Court ruling. Throughout this paper, we use these categories in order to estimate the effects of same-sex marriage legalization and the *Obergefell v. Hodges* ruling.

[8]The preferred estimation strategy employed by this paper is an event-study design. When estimating the effects of the *Obergefell v. Hodges* ruling we do not consider states that legalized same-sex marriage between 2012 and the 2015 ruling because our pre-treatment years are contaminated with a change in legalization status.

Despite many states recognizing same-sex marriages, even legally married couples did not receive the same federal rights and benefits as different-sex couples due to the Defense of Marriage Act (DOMA). Married same-sex couples could not avail federal tax, social security or immigration benefits enjoyed by married different-sex couples. This was until 2013 when the U.S. Supreme Court struck down DOMA in the *United States v. Windsor* case. This meant that legally married same-sex couples could access the same benefits enjoyed by married different-sex couples. This landmark ruling laid the groundwork for the Supreme Courts 2015 ruling in *Obergefell v. Hodges* which granted same-sex couples the right to marry across the entire United States. The *Obergefell v. Hodges* ruling received nationwide coverage with millions of twitter users using the Human Rights Campaign's hashtag "#LoveWins" nationwide (Awards, 2016).

3 How Might the *Obergefell v. Hodges* Ruling Impact Mortgage Credit?

The *Obergefell v. Hodges* ruling increased the likelihood that same-sex couples in committed relationships marry. In Obergefell States, same-sex couples who previously had to travel to other states to marry, and whose marriages were not recognized in-state, could now marry locally. This reduced the costs of marriage and allowed them to access state and federal benefits associated with marriage. These include, among others, the ability to file taxes jointly, which often reduces tax liability; access to spousal Social Security and survivor benefits; inheritance rights; and other homeownership-related benefits detailed below (The Knot, 2025).[9] In both Obergefell and Early Legalization States, the ruling increased the likelihood that same-sex

[9]In a related paper, Persson (2020) finds that the elimination of survivors insurance associated with marriage in Sweden led to changes in marital behavior, suggesting that marriage plays a role in couples' financial strategies.

couples in committed relationships marry due to the added certainty of permanence provided by the federal recognition and because of an increase in the acceptance of same-sex marriage, and of same-sex couples more generally, following the ruling (Kazyak and Stange, 2018; Kaufman and Compton, 2021). Additionally, the ruling may have increased awareness among same-sex couples about the possibility of legal same-sex marriage and its associated benefits, a phenomenon known as the "woodwork effect."[10, 11]

Besides increasing the likelihood that committed relationships convert to marriage, the ruling may have also encouraged the formation of non-marital monogamous relationships, as research suggests that the ruling improved the well-being of LGBT adults, which could catalyze the formation of monogamous relationships (Ogolsky et al., 2019; Flores et al., 2020). Supporting this claim is the observed decline in sexually transmitted infections following the legalization of same-sex marriage (Nikolaou, 2023a,b; Dee, 2008).

While accurate state-level same-sex marriage rates (i.e., the number of same-sex marriages per year divided by the population) are unavailable, existing evidence suggests that the *Obergefell v. Hodges* ruling was indeed accompanied by a rise in same-sex marriages. Marriage statistics are typically obtained from each state's vital records. However, few states report the number of same-sex marriage certificates issued. Fisher et al. (2018) addresses this challenge by examining tax returns filed by same-sex married couples for the years 2013 and 2015. They find that by the end of 2015, there were already tens of thousands of married same-sex couples in

[10]Woodwork effect refers to the phenomenon where an increase in the availability of a public benefit or service leads to a greater number of eligible individuals coming "out of the woodwork" to access the service.

[11]The *Obergefell v. Hodges* ruling received significant media coverage with millions of twitter users using the Human Rights Campaign's hashtag "#LoveWins" nationwide (Awards, 2016). The second panel of Figure A10 shows a significant spike in google searches for the term 'same-sex marriage' around the time of the *Obergefell v. Hodges* ruling indicating heightened public awareness of the ruling.

Obergefell States. For example, in 2015, the two largest Obergefell States, Texas and Florida, had 15,062 and 17,627 married same-sex couples, respectively (though some may have married earlier in states with prior legalization). In Early Legalization States, the number of married same-sex couples also rose significantly between 2013 and 2015. Even in states that had legalized same-sex marriage prior to 2012, such as New York and the District of Columbia, the number of married same-sex couples grew by approximately 50% between 2013 and 2015. Although Fisher et al. (2018) does not claim causality, it is likely that such a large increase in married same-sex couples around the time of the ruling was partially due to the ruling.[12]

Marriage, in turn, incentivizes homeownership, driving the demand for mortgage credit. Marriage is a life event associated with homeownership for several reasons (Cheung et al., 2020; Smits and Mulder, 2008). First, marriage signals a long-term partnership which aligns with the long-term financial commitment required for homeownership. Second, married couples are more likely to join financial resources, potentially increasing their borrowing power when applying for a mortgage, raising their chances of qualifying, and being lent a larger amount at a lower interest rate. Third, marriage confers several tax benefits that might incentivize homeownership. For example, married couples can file their taxes jointly which grants them higher mortgage interest and property tax deductions, reducing their tax liability (Internal Revenue Service, 2025; National Association of Home Builders, 2025). Married couples also benefit from favorable inheritance and estate tax policies. For example, they can transfer property to each other without incurring estate taxes and have the right

[12]Survey data provides only limited insight into same-sex marriages because it captures whether a couple is married at a specific point in time (a stock variable) rather than tracking the flow of marriages over time. Nonetheless, we use data from the American Community Survey (ACS) to estimate the size of the same-sex married population from 2012 onward. Figure A2 presents the number of individuals in same-sex marriages residing in the Earliest Legalization States, Expanded Early Legalization States, and Obergefell States. Even using survey data, we find that the same-sex married population continued to grow, including in states where same-sex marriage was already legal prior to the *Obergefell v. Hodges* ruling.

to inherit from each other even in the absence of a will (Investopedia, 2025; Barron, Rosenberg, Mayoras Mayoras, 2025). Additionally, married couples may view homeownership as a shared long-term investment that can bolster their wealth over time (Carroll and Cohen-Kristiansen, 2021; Grinstein-Weiss et al., 2013).[13] Finally, marriage may also increase the desire among same-sex couples to raise children, as legal marriage facilitates joint adoption and access to parental rights (Martin and Rodriguez, 2022), further reinforcing the demand for stable, family-friendly housing.

4 Data

Estimating the effects of policies on sexual minorities is difficult due to the data landscape, as most surveys do not report sexual orientation, which makes it difficult to correctly identify sexual minorities (Badgett et al., 2021). As a result, researchers have come up with innovative ways of identifying sexual minorities.[14] Moreover, even when researchers are able to identify sexual minorities, surveys often contain only a small sample of this population.

In this paper, we employ the Home Mortgage Disclosure Act (HMDA) data, which is published by the Federal Financial Institutions Examination Council (FFIEC) and accessed via the Consumer Financial Protection Bureau (CFPB) (Federal Financial Institutions Examination Council, 2023). Unlike survey-based data, HMDA provides information on nearly all U.S. mortgage applications, allowing for a comprehensive analysis of mortgage demand. HMDA data is collected as a result of the 1975 act that requires many financial institutions to report loan-level information on mortgages. It is the most comprehensive available dataset on mortgage market activities. The U.S. Department of Housing and Urban Development (HUD) estimates that between 75

[13] In a related paper, Lafortune and Low (2023) relate homeownership, which offers insurance to the lower earning partner in a marriage, to household specialization and public goods creation.

[14] For example, Carpenter et al. (2021) exploits the sex composition of households to identify respondents who are more likely to be same-sex couples.

and 85 percent of conventional originations are reported in HMDA data (2011).[15]

HMDA data is available at the application level. In our analysis, we examine mortgage applications from the years 1998 to 2019.[16] We exclude home-improvement and refinancing applications because they do not directly reflect new home purchases, and we exclude non-owner-occupied properties using the owner-occupied flag because they may represent property investments rather than primary residences (Robinson, 2012).[17] Additionally, we drop applications lacking clear information on both an applicant and a co-applicant. After these restrictions, the sample represents approximately 32% of the full dataset of all home purchase applications in the HMDA.

For each application, the data contains a rich set of information on applicant and co-applicant demographics, loan characteristics, lender characteristics, and application outcomes. Specifically, it details the applicant and co-applicant sex. Using this information and following previous research, we categorize an application as a same-sex couple application if the applicant and co-applicant are of the same sex, and as a different-sex couple application if the applicant and co-applicant are of a different sex (Miller and Park 2018; Hagendorff et al. 2022; Sun and Gao, 2019). This method is imperfect, as it potentially miscategorizes some applications as same-sex couple applications even though the applicant and co-applicant are not a couple. For example, a father may be the co-applicant on his son's application. It also does not identify all same-sex couple applications as some same-sex couples do not apply jointly. However, since these should not significantly change with the treatment timing (i.e. the timing of early same-sex marriage legalization or the *Obergefell v. Hodges* ruling), we do not

[15] We do not observe cash purchases of homes as well as loans from smaller lenders.

[16] We do not use more recent years to avoid capturing the effects of the Covid-19 pandemic.

[17] We are unable to separately identify reverse mortgage applications in our data because the HMDA data only began providing information on reverse mortgages in 2018. However, reverse mortgage applications represent only a small fraction (approximately 0.4%) of all mortgage applications from 2018-2020, so their presence should not meaningfully impact our analysis (Tayar, 2022).

expect these to affect our analysis.[18] After restricting the application-level dataset, we aggregate the data to the state×year level for estimation.

To further verify that our categorization of same-sex couples is reasonably indicative of actual same-sex couples, we plot the state-level share of same-sex couple applications in the HMDA data (calculated as a share of *all* mortgage applications) alongside the share of same-sex homeowners in the American Community Survey (ACS) in Figure 1.[19,20] We find that these variables are highly correlated ($r = 0.6$) but that the HMDA systematically overstates same-sex home ownership relative to the ACS. This may be the result of two factors. Firstly, HMDA captures mortgage applications (a flow variable representing home purchases), whilst ACS measures current home ownership (a stock variable). If the proportion of same-sex couples owning homes is growing over time, we would expect the flow-based HMDA data to systematically report higher same-sex homeownership rates relative to the stock-based ACS measure. Secondly, HMDA data provide limited demographic covariates for identifying same-sex couples, potentially leading to misclassifications. Specifically, applications submitted jointly by related individuals (e.g., father-son or mother-daughter pairs) can be mistakenly identified as same-sex couples.

While the HMDA data does not provide information on the relationship between the applicant and co-applicant, we use the age bins that are provided for each indi-

[18] To ensure that the estimated effects are not driven by non-couple family members applying together, in subsection 6.1, we restrict the sample to include only different race couples since non-couple family members are unlikely to belong to different racial groups. We find that our estimates are consistent.

[19] Although the ACS provides data on home ownership and same-sex couple status, we believe the HMDA data is a superior source for studying effects on home-ownership. In addition to containing a smaller sample of same-sex couples, ACS data is only able to identify home ownership in a particular period of time as a stock variable while the HMDA data allows us to study mortgage applications or changes in homeownership as a flow variable. Previous research identifies the benefits of studying effects on flow variables rather than stock variables (Abramowitz et al., 2017).

[20] We use data from the years 2008-2019 for this comparison because several researchers have documented problems with using ACS data in order to identify same-sex couples in earlier years (Gates and Steinberger, 2009; Badgett et al., 2021).

vidual in 2018-2019 to explore this misclassification.[21] Applicant–co-applicant pairs whose ages differ by two to three bins are more likely to represent parent-child relationships.[22] In the first panel of Figure A1, we plot the overall state-level share of same-sex couple applications in the HMDA data alongside the share of same-sex homeowners from the ACS for 2018–2019. This figure, similar to Figure 1, shows a positive correlation between these two measures, but also indicates that HMDA systematically overstates same-sex homeownership relative to the ACS. In the second and third panels of Figure A1, we further separate same-sex couple applications into those pairs likely reflecting parent-child age differences (i.e., applicants differing by two to three age bins) and all other pairs, including those in the same age bin. We find lower state-level variation in same-sex couple applications with parent-child age differences, and notably, the positive correlation between same-sex applications in HMDA and same-sex homeowner shares in the ACS is driven almost entirely by pairs without parent-child age differences. Since the age bins necessary to identify potential parent-child pairs are only available for 2018–2019, we are unable to restrict our main sample to exclude these pairs for earlier years. This limitation suggests that the presence of parent-child pairs likely contaminates estimates of same-sex homeownership derived from HMDA data. Consequently, since the estimates presented in this paper reflect percentage changes, they likely represent lower bounds of the true impact of same-sex marriage legalization on mortgage demand from same-sex couples.[23] However, because this misclassification is unlikely to vary with the timing of treatment (i.e. the timing of early same-sex marriage legalization or the *Obergefell v. Hodges* ruling), we do not expect it to affect the direction of our estimated coefficients.

In Table 2, we provide summary statistics for states by the year in which same-sex

[21] Age bins include: under 25, 25–34, 35–44, 45–54, 55–64, 65–74, and over 74.

[22] Pairs with ages differing by two to three bins have an age gap between 21 and 39 years.

[23] If a fixed number of same-sex applicant–co-applicant pairs are parent–child pairs unaffected by the policy, then any true increase in demand from same-sex couples will appear smaller in percentage terms.

marriage was legalized for the years 1998 to 2019. On average, states that legalized same-sex marriage early have a larger share of same-sex couples.[24] These states also have a larger share of mortgage applications from same-sex couples, as calculated from HDMA.

There are also important differences in application characteristics between same-sex male, same-sex female and different-sex applications. These differences are presented in Table 3. Same-sex applicants have higher rates of denial, are more likely to be applying for an FHA loan, and apply for smaller loan amounts. Same-sex male applicants have higher annual incomes compared to different-sex applicants, whereas same-sex female applicants have lower incomes compared to different-sex couples.

In addition to these variables, for the years 2018 and 2019, the HMDA data also includes information on interest rates, the property value of the home being purchased, the applicants' debt-to-income ratio and the applicants' age. We provide summary statistics for these variables in the second panel of Table 3. In general, same-sex couples pay higher interest rates and apply for cheaper properties. These statistics are in line with other studies identifying disparities between same-sex and different-sex couples in the home-mortgage market (Sun and Gao, 2019; Eilam and Lee, 2025). While these statistics offer a useful overview of the differences between same-sex and different-sex couples, they are unconditional so do not account for differences in characteristics across groups. For example, the observed disparities in quoted interest rates could reflect differences in loan type, income, or other borrower characteristics. Interestingly, same-sex applicant pairs are also more likely to have age gaps similar to parent-child relationships.[25] This may partially be explained by

[24] We calculate the share of same-sex couples from the American Community Survey (ACS) and the Behavioral Risk Factor Surveillance System (BRFSS). Since BRFSS does not directly report the relationship status of household members, we follow Carpenter et al. (2021) and exploit the sex composition of households to identify respondents who are more likely to be same-sex couples.

[25] Even for the 2018–2019 sample, information about applicant and co-applicant ages is limited, as the data only provide age ranges (under 25, 25–34, 35–44, 45–54, 55–64, 65–74, and over 74). Therefore, we classify pairs whose ages differ by two to three bins as representing parent-child age

the fact that same-sex couples have larger age differences (Hemez and Mejía, 2023). However, given the magnitudes of these differences, it is likely that many of the same-sex applications represent non-couple pairs such as parent-child.

We also explore trends in mortgage demand from same and different sex couples. Figure 2 depicts the total number of mortgage applications from same-sex and different-sex couples per 100,000 population over time. In general, we find that applications from same-sex couples follow a similar trend to applications from different-sex couples.[26,27]

5 Methodology & Results

5.1 Early Legalization

We start by estimating the effects of same-sex marriage legalization on the mortgage demand of same-sex couples in Early Legalization States using an updated estimator that is robust to staggered treatment timing and treatment effect heterogeneity (Borusyak et al., 2021). For this part of the analysis, we consider all states and focus on the period from 1998 to 2014.[28] Our identification strategy compares the mortgage applications of same-sex and different-sex couples, living in states that legalized and states that did not legalize same-sex marriage, before and after legalization.

Formally, we estimate the following difference-in-differences equation:

differences (between 21 and 39 years).

[26] The large dip in applications in late 2000s is a result of the Great Recession.

[27] Trends in mortgage demand from different and same sex couples for Earliest Legalization States, Expanded Early Legalization States and Obergefell States are presented in Figure A4

[28] We do not include post-2015-years because there is no control group since all states legalized same-sex marriage following the ruling.

$$\text{Log(Applications)}_{ost} = \alpha + \sum_{\substack{m \neq -1 \\ m=-5}}^{5} \beta_m \left(\text{SSM}_{sm} \times \text{App Type}_o\right) + \text{Domestic Partnership}_{ost}$$
$$+\gamma_{st} + \delta_{ot} + \nu_{os} + \epsilon_{ost} \tag{1}$$

where $\text{Log(Applications)}_{ost}$ is the log number of applications of orientation ($o \in$ same-sex, different-sex), in state (s), in year (t). App Type_o is an indicator that equals 1 if an observation represents same-sex couples and 0 if an observation represents different-sex couples. We include ($\text{Domestic Partnership}_{ost}$) to control for the recognition of any sort of domestic partnerships or civil unions for same-sex couples.[29] State×time fixed effects (γ_{st}) control for state time-varying factors that similarly affect the mortgage demand of same-sex and different-sex couples, such as local economic shocks, or real estate market trends.[30] Orientation×time fixed effects (δ_{ot}) control for nationwide time-varying factors that differently affect the mortgage demand of same-sex and different-sex couples. State×orientation fixed effects (ν_{os}) control for state time-fixed factors that differently affect the mortgage demand of same-sex and different-sex couples.

The treatment variable SSM_{sm} is an indicator for the passage of same-sex marriage legalization in state s in period m, where m ranges from five years before to five years after legalization. The coefficients of interest β_m measure the changes in $100 \times \beta_m\%$ applications of same-sex couples as a result of same-sex marriage legalization. These are identified as the differences in log applications between same-sex and different-sex couples in period m in comparison to the baseline year in states that legalized

[29] We assume that these laws only affect same-sex couples and therefore, this variable is always zero for different-sex couples.

[30] We do not include any state-level controls as they would be absorbed by the state×time fixed effects.

same-sex marriage, and relative to the these differences in states that did not legalize same-sex marriage. Estimates are weighted by state populations and standard errors are clustered at the state level.

The identifying assumption is that absent of same-sex marriage legalization, the differences between same-sex and different-sex mortgage applications would have evolved in parallel in states that had legalized same-sex marriage and states that had not. Although untestable, our event studies provide evidence that prior to same-sex marriage legalization, differences between same-sex and different-sex mortgage applications have generally evolved similarly in states that would later legalize same-sex marriage and those that would not. A separate challenge for interpreting the estimated coefficients would arise if legalization affected the mortgage demand of different-sex couples, altering their marriage and household formation patterns, and thereby affecting mortgage demand. However, existing research does not find evidence that the legalization of same-sex marriage significantly altered the trends of opposite-sex marriage, family formation, divorce rates, or extramarital birth rates (Dillender, 2014; Trandafir, 2015; Trandafir, 2014; Carpenter, 2020).[31]

Given recent developments in the difference-in-differences literature which identify significant flaws with linear regressions and fixed effects specifications with staggered treatment timing and treatment effect heterogeneity, in our preferred specification, we use the Imputation Estimator developed by Borusyak et al. (2021). This estimator is robust to heterogeneity in treatment timing and effects.[32]

Estimates for Equation 1 are provided in Figure 3. We provide estimates using the imputation estimator produced by Borusyak et al. (2021) as well as a traditional

[31] To further ensure that the effects documented in this paper are not driven by changes in mortgage demand from different-sex couples, we reestimate Equation 1 using applicants who apply without co-applicants as the control group. Estimates are presented in the first panel of Figure A7 and are similar to our main results.

[32] We use the Imputation Estimator over other similarly credible estimators such as the one produced by Callaway and Sant'Anna (2021) because it allows for a triple difference specification and can easily incorporate time-varying control variables and population weights.

two-way fixed effects model. We find no evidence of pre-trends, as the coefficients for the periods prior to same-sex marriage legalization are statistically insignificant. For the periods after same-sex marriage legalization, the coefficients become positive and statistically significant, indicating an increase in mortgage demand from same-sex couples relative to different-sex couples in states that legalized same-sex marriage relative to states that did not. We find immediate effects which grew overtime.

To summarize the event study estimates into a single estimate, we also estimate the following equation which groups the pre and post periods:

$$\begin{aligned}\text{Log(Applications)}_{ost} = \alpha + \beta(\text{SSM}_{st} \times \text{App Type}_o) + \text{Domestic Partnership}_{ost} \\ + \gamma_{st} + \delta_{ot} + \nu_{os} + \epsilon_{ost}\end{aligned} \tag{2}$$

Now, SSM_{st} is an indicator that equals 1 when state s offers legal same-sex marriage in year t. All other features are similar to Equation 1. Estimates from Equation 2 are provided in Table 4. We find that early same-sex marriage legalization increased the mortgage demand of same-sex couples by approximately 12%. Although smaller in magnitude, this result is in line with the findings of Miller and Park (2018), who estimate the effect at 16.2%.[33]

5.2 Effects of *Obergefell v. Hodges*

Estimating the effects of the *Obergefell v. Hodges* ruling requires particular care as there are no untreated states after the ruling. To circumvent this issue, researchers estimating the effects of the ruling on various outcomes used states that had legalized

[33] We implement a newer estimator that is robust to staggered treatment timing and treatment effect heterogeneity, unlike the standard TWFE estimator implemented in Miller and Park (2018). There are several potential reasons for the larger magnitude estimated in Miller and Park (2018); these include the use of slightly different controls, and biases stemming from the use of a TWFE estimator in this context such as heterogeneous treatment effects over time and contamination from already-treated units.

same-sex marriage prior to the ruling as controls for states that legalized same-sex marriage after the ruling (e.g. Massachusetts as a control for Georgia) (Nikolaou, 2023a). This method could yield particularly misleading results in this context. In addition to ignoring the dynamic treatment effects experienced by states following same-sex marriage legalization, it also ignores the possibility that the *Obergefell v. Hodges* ruling may have affected same-sex couples in already treated-states (e.g. Massachusetts). If the effects of *Obergefell v. Hodges* on states which did not offer same-sex marriage and states that had previously legalized same-sex marriage are in the same-direction, this method would yield an estimate that is biased downwards. In order for the resulting coefficient to be statistically significant, the effect in states newly affected by the ruling must be significantly greater than that in already-treated states. This may be particularly unlikely in the case of same-sex marriage legalization because, as suggested by Table 2, there is a larger population of same-sex couples living in Early Legalization States.

In this paper we take a different approach. Instead of comparing newly affected states with already-treated states, before and after same-sex marriage legalization, our identification strategy compares the mortgage applications of same-sex and different-sex couples, before and after the ruling. Although this strategy does not leverage geographic variation as Equation 1 and Equation 2 do—and instead relies exclusively on within-state differences over time between same-sex and different-sex couples—it has the distinct advantage of ensuring that our control group is not contaminated by the policy change.

Formally, we estimate the following difference-in-difference equation:

$$\text{Log(Applications)}_{ost} = \alpha + \sum_{\substack{m \neq 2014 \\ m=2011}}^{2019} \beta_m \left(\text{Obergefell}[t = m] \times \text{App Type}_o\right) + \text{Domestic Partnership}_{ost} + \mathbf{X}_{st} + \gamma_s + \delta_t + \nu_o + \epsilon_{ost} \tag{3}$$

where $\text{Log(Applications)}_{ost}$ is the log number of applications of orientation ($o \in$same-sex, different-sex), in state (s), in year (t). App Type_o and $\text{Domestic Partnership}_{ost}$ are as defined in Equation 3. We include a series of time-varying state level controls ($\mathbf{X}_{st}$) - unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. State fixed effects (γ_s) control for time-fixed differences between states that affect mortgage demand. Time fixed effects (δ_t) control for time varying factors that effect mortgage demand. Orientation fixed effects (ν_o) control for differences between same-sex and different-sex couples that affect mortgage demand.[34]

The treatment variable (Obergefell$[t = m]$) is an indicator that equals 1 if an observation is m years relative to 2015. The coefficients of interest β_m measure the change in $100 \times \beta_m\%$ applications of same-sex couples as a result of the *Obergefell v. Hodges* ruling. These are identified as the differences in log applications between same-sex and different-sex couples in period m in comparison to the baseline year 2014. Estimates are weighted by state populations and standard errors are clustered at the state level.

The identifying assumption is that absent the *Obergefell v. Hodges* ruling, the differences between same-sex and different-sex mortgage applications would have evolved in parallel. A potential violation of this assumption could occur if there were changes in relationship investment decisions among the heterosexual population concurrent

[34]Since this is a difference-in-differences specification instead of a triple differences specification, we do not include interactions of these fixed effects as they would absorb the identifying variation.

with the *Obergefell v. Hodges* ruling. For instance, if opposite-sex marriage rates or household formation behaviors shifted notably around this time, the observed differences in mortgage demand could reflect these broader demographic trends rather than the direct effects of the ruling itself. While we are unable to completely rule out this possibility, we find no evidence of discontinuous changes in the number of different-sex married couples around the *Obergefell v. Hodges* ruling as per the American Community survey in Figure A11.[35] Additionally, to further ensure that the effects documented in this paper are not driven by changes in mortgage demand from different-sex couples, we reestimate Equation 3 using applicants without co-applicants as the control group. Estimates are presented in the second and third panel of Figure A7 and are similar to our main results. Another violation of this assumption would occur if mortgage demand from same-sex couples changed due to a factor other than the *Obergefell v. Hodges* ruling. While this possibility cannot be ruled out, the ruling was a major legal and social event for sexual minority men and women, and we are not aware of other contemporaneous shocks that would plausibly have had similar effects on same-sex couples' mortgage behavior.

We estimate the effect of the ruling separately for states that legalized same-sex marriage because of the ruling (Obergefell States) and states that had already legalized same-sex marriage prior to the ruling.[36] States' categories are detailed in Table 1. In order to ensure that the pre-years are not contaminated by a change in legalization status, we only estimate the effect of the ruling on the Earliest Legalization States

[35]It is important to note that the American Community Survey (ACS) provides only limited insight into partnership formation decisions among different-sex couples. Specifically, ACS data identify only the total number of different-sex married couples at a given point in time—a stock variable—whereas our primary interest may lie more directly in the flow variable of marriage rates. Unfortunately, there is limited data on rates of marriages between same and different-sex couples. Marriage rates are often calculated using marriage certificate data collected by the vital statistics of each state. The vast majority of states do not publish data regarding the number of marriage licenses issued to same and different-sex couples (Fisher et al., 2018).

[36]Obergefell States include Alabama, Arkansas, Florida, Georgia, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, North Dakota, Nebraska, Ohio, South Dakota, Tennessee, and Texas.

and do not consider effects on Expanded Early Legalization States.[37] Given that our main analysis focuses exclusively on states that experienced no change in same-sex marriage legalization during our study period apart from the *Obergefell v. Hodges* ruling, we do not include the indicator term SSM_{st} from Equation 1 and Equation 2. In this context, the SSM_{st} term is redundant, as it would always equal 1 for Early Legalization States and would be perfectly collinear with the $Obergefell[t = m]$ term for Obergefell states.[38] Additionally, because our identifying variation relies exclusively on differences across time and applicant type, we cannot include the broader set of fixed effects used in Equation 1 and Equation 2.[39]

Estimates for Equation 3 are provided in Figure 4. We provide estimates using the imputation estimator produced by Borusyak et al. (2021) as well as a traditional two-way fixed effects model. As the figure shows, both Obergefell and the Earliest Legalization States experienced significant increases in the mortgage demand of same-sex couples relative to different-sex couples following the ruling. We find no evidence that these positive effects are a result of pre-trends. In Earliest Legalization States, the coefficients for the periods prior to the ruling are statistically insignificant. In Obergafell states, mortgage demand of same-sex couples relative to different-sex couples was trending downward, prior to the ruling and the ruling reversed that trend,

[37] Earliest Legalization states include Massachusetts, Connecticut, Iowa, Vermont, District of Columbia, New Hampshire and New York. Although California was one of the first states to legalize same-sex marriage in June of 2008, this ruling was overturned later that year. Therefore, we do not do not treat California as an early legalization state.

[38] While we choose not include estimated effects of the *Oberbefell v. Hodges* ruling on States that legalized same-sex marriage in the years 2012-2014 as the main results of the paper, we present estimates in Figure A5. The estimation equation for this figure is identical to Equation 3 but includes an indicator term for same-sex marriage legalization SSM_{st}. Estimates are similar to effects on Obergefell States.

[39] Orientation×time fixed effects (δ_{ot}) specifically would absorb all identifying variation. In Figure A6, we show that our estimates are robust to the inclusion of state×time fixed effects (γ_{st}) and state×orientation fixed effects (ν_{os}).

which suggests that our estimates are biased downwards.[40,41] In both cases, we find immediate effects that grow over time, suggesting that the effects measured in this study do not solely reflect pent-up demand.

To summarize the event study estimates into a single estimate, we also estimate the following equation, which combines both pre and post periods:

$$\text{Log(Applications)}_{ost} = \alpha + \beta\ (\text{Obergefell}_t \times \text{App Type}_o) + \text{Domestic Partnership}_{ost} + \mathbf{X}_{st} + \gamma_s + \delta_t + \nu_o + \epsilon_{ost} \tag{4}$$

Now, Obergefell_t is an indicator that equals 1 for the years 2015 (*Obergefell v. Hodges* ruling year) onwards. All other features are similar to Equation 3. Estimates from Equation 4 are provided in Table 5. The first panel details the results for Obergefell States and the second panel details the results for Earliest Legalization States. Given the smaller number of clusters in some of our specifications, in addition to reporting standard p-values, we also report wild bootstrapped p-values with 999

[40]This pre-Obergefell downwards trend can be explained by findings from the literature. Marcén and Morales (2022) finds that same-sex marriage legalization resulted in sexual minorities migrating to states which recently legalized same-sex marriage. Although we cannot observe migration patterns in the HMDA data, seeing a greater number of same-sex couples moving from Obergefell States to Early Legalization States prior to the 2015 ruling, may explain the downwards trend in the pre-treatment years in the first panel Figure 4. This also does not require that we observe opposite trends for earliest legalization states. Same-sex couples who might have purchased homes in Obergefell States might be moving and purchasing homes in expanded Early Legalization States rather than the earliest legalization states. They also might be moving and forgoing or delaying purchasing a home.

[41]In Figure A8, we provide estimates for the detrended version of Equation 3. Here, we follow Goodman-Bacon (2021) and detrend the outcome variable. This involves changing the outcome variable to represent the residual of a state specific predicted time trend variable. This is calculated by using only pre-years to estimate a coefficient which measures linear time trends in the outcome variable for each state and then using these coefficients to estimate a linear time trend for each state-year combination. We find that this methodology eliminates pre-existing trends and also makes our coefficients measuring the effects Obergefell on Obergefell States and Earliest Legalization States significantly larger.

repetitions in Table 4 and Table 5 (Cameron et al., 2008).[42,43] The imputation estimator does not allow for wild bootstrap clustering so we only report standard p-values for those coefficients. Our estimates remain statistically significant even when we use wild bootstrap clustered standard errors.[44] The estimates suggest that *Obergefell v. Hodges* increased same-sex mortgage demand in Obergefell States by 12% and increased same-sex mortgage demand in Early Legalization States by 15%.[45]

One limitation of the analysis presented in this paper is that we are unable to identify same-sex couples who choose not to apply for mortgages jointly. The treatment (same-sex marriage legalization or the *Obergefell v. Hodges* ruling) may have induced same-sex couples to apply jointly rather than as individual applicants. This means that the observed effects presented in this paper may partly reflect changes in how same-sex couples present themselves on mortgage applications, rather than changes in underlying demand for homeownership. While we cannot test this directly, Figure A3 presents trends in applications from single applicants per 100,000 and same-sex coapplicant pairs per 100,000. We do not observe a sharp decline in single applications coinciding with the *Obergefell v. Hodges* ruling in 2015.[46]

[42]In order to achieve 999 repetitions we follow advice from Roodman et al. (2019) and use Webb weights when dealing with particularly small numbers of clusters.

[43]We cluster standard errors at the state level; there are 16 Obergefell States and 7 Earliest Legalization States and therefore this is the number of clusters used in estimating the effect of the ruling on each group of states. Research suggests that given the small number of clusters (<30), cluster-robust standard errors are downwards biased. To provide more accurate cluster-robust inference given the few clusters, we report wild bootstrapped p-values, the most commonly used method in this context (Cameron et al., 2008).

[44]In Figure A9, we present estimates for our event study specification using wild bootstrap clusters.

[45]Given that our estimation strategy involves comparing mortgage applications with co-applicants of the same sex to those of different sexes, there might be concerns that the observed effects are due to changes in the composition of the group of people applying for mortgages with co-applicants. In order to rule out this possibility, we explore the effect of same-sex marriage legalization and the *Obergefell v. Hodges* ruling on mortgage applications from applicants with co-applicants relative to single filers in Figure A12. We find no evidence that same-sex marriage or the *Obergefell v. Hodges* ruling affected the proportion of overall applications from couples.

[46]While it is reassuring that there is no drop in applications from single applicants around the time of the *Obergefell v. Hodges* ruling, we caution the reader not to interpret this as evidence that our effects do not reflect changes in how same-sex couples apply for mortgages. Because applications from same-sex coapplicants represent a small share of total applications relative to single applicants, even meaningful shifts from individual to joint applications from same-sex couples are unlikely to

One confounder which may be driving the observed effects of the *Obergefell v. Hodges* ruling on mortgage demand is the 2013 repeal of the Defense of Marriage Act (DOMA) (*United States v. Windsor*). The repeal of DOMA granted married same-sex couples access to the same federal benefits enjoyed by difference-sex couples. Since the repeal affected the rights of married same-sex couples, we expect that the 2013 repeal disproportionately affected states which had already legalized same-sex marriage.[47] Although we do not see a discontinuity in the demand for mortgage credit around 2013 in Figure 4, it is possible that the post 2015 coefficients represent a delayed response to the repeal of DOMA.[48] Since our identifying variation relies exclusively on differences over time and between application types (i.e., applications from same-sex and different-sex couples), and given the short interval between the *United States v. Windsor* and the *Obergefell v. Hodges* decision, we are unable to fully disentangle the effects of these two events on mortgage demand.

Nonetheless, we argue that the repeal of DOMA is inextricably linked to the 2015 Supreme Court ruling. Although a pivotal step towards national recognition of same-sex marriage, the 2013 repeal received significantly less coverage compared to the 2015 *Obergefell v. Hodges* decision.[49] There was also significant confusion about

generate observable changes in aggregate trends.

[47] We are still unable to rule out the effects of the repeal of DOMA on Obergefell States because many same-sex couples would travel to Early Legalization States in order to get married.

[48] Badgett and Mallory (2014b) show that there is a spike in the number of same-sex marriages in some of the states which had previously legalized same-sex marriage right after the repeal of DOMA.

[49] In Figure A10, we present trends in search intensities for certain relevant terms in order to show the salience of the *Obergefell v. Hodges* ruling compared to the *United States v. Windsor* Decision. The first panel presents trends in search intensities for the terms "*United States v. Windsor*" and "*Obergefell v. Hodges*". The figure shows a significantly greater number of searches for "*Obergefell v. Hodges*" compared to "*United States v. Windsor*". In the second panel, we present trends in search intensities for the term "Same Sex Marriage". Although we see a spike in search intensities for this term around the *United States v. Windsor* Decision, this spike is significantly smaller than the spike in searches around the *Obergefell v. Hodges* ruling. Taken together, this figure depicts the relative salience of the *Obergefell v. Hodges* decision compared to the *United States v. Windsor* decision. This heightened salience is important because it suggests that more individuals, including same-sex couples, became newly aware of their rights to marriage and the associated benefits under the law. This pattern is consistent with the "woodwork effect," in which increased visibility or publicity prompts eligible individuals to act on benefits they were previously unaware of.

which rights married same-sex couples were eligible for following the repeal. The *Obergefell v. Hodges* ruling received significant media attention and provided much-needed clarity and uniformity. It is possible that the observed effects of the *Obergefell v. Hodges* ruling on Early Legalization States may represent woodwork effects.[50] Whether these developments are attributed to the repeal of DOMA or the *Obergefell v. Hodges* ruling, our study adds complexity to our understanding of the effects of same-sex marriage legalization. By focusing only on state-level legislation and overlooking the impact of substantial national changes, we risk missing key aspects of the policy shifts affecting sexual minorities.

Taken together, we find that *Obergefell v. Hodges* not only increased mortgage demand by same-sex couples that gained access to same-sex marriage via the Supreme Court ruling, but also increased mortgage demand for same-sex couples in states which had already legalized same-sex marriage. This underscores the importance of federal Supreme Court rulings over more localized state policies, as the former provide greater legal certainty and consistency.

6 Robustness

In order to verify the credibility of our findings, we present estimates for several alternative specifications in Table A1. In the first two panels, we show that our estimates are robust to dropping control variables. In the next two panels, we show that estimates are robust to dropping population weights.[51] In the last 2 columns, we detrend our outcome variable and reestimate Equation 2 & Equation 4.[52] We find

[50] Woodwork effect refers to the phenomenon where an increase in the availability of a public benefit or service leads to a greater number of eligible individuals coming "out of the woodwork" to access the service.

[51] Solon et al. (2015) explains that differences in population-weighted and unweighted estimates may be a result of unmodeled heterogeneity. They suggest reporting both weighted and unweighted estimate.

[52] We accomplish this by changing the outcome variable to represent the residual of a state specific predicted time trend variable. This is calculated by using only pre-years to estimate a coefficient

that estimates measuring the effects of Early Legalization remain largely unchanged but as suggested from the pre-trends in Figure 4, estimates for the effect of Obergefell are significantly larger after detrending the outcome variable.

6.1 Only Applications from Bi-Racial Couples

Given our inability to directly ascertain the sexual orientation of applicants, we operate under the assumption that applicants of the same sex who apply together are more likely to be same-sex couples. However, not all joint applicants from same-sex individuals represent same-sex couples. Non-couple family members may choose to buy property together. Table 3 suggests that a significant portion of joint applicants from same-sex individuals represent age differences akin to parent-child age-differences. In order to ensure that the effects documented in this paper are not driven by changes in the number of family applications over time and space, we re-estimate Equation 2 and Equation 4 while restricting the sample to applications in which the applicant and co-applicant are of different races. Lenders are required to gather information on the race of loan applicants. If an applicant does not report their race, the lender selects a race based on visual appearance (Lewis-Faupel and Tenev, 2024). We classify applicants who report their race as White, Black, Asian, American Indian or Alaska Native, or Native Hawaiian or Other Pacific Islander, and have coapplicants of a different race from this same list, as different-race applicants.[53] These applicants are significantly less likely to be non-couple family members.[54] In the first two columns of Table 6, we show that the overall effects persist in this subsample.

which measures linear time trends in the outcome variable for each state and then using these coefficients to estimate a linear time trend for each state-year combination.

[53]We do not include applicant co-applicant pairs ethnic differences in this classification. We also do not include applications where the applicant or co-applicant does not report a race.

[54]In Table A2, we show that while even from different-race applications, same-sex applicants are more likely to exhibit parent-child age differences than applications from different-sex applicants, this difference is much smaller than the general sample depicted in Table 3.

6.2 Only Accepted Mortgage Applications

Recent literature suggests that same-sex marriage legalization increases denial rates among same-sex couples applying for mortgages (Hagendorff et al., 2022). Since we are unable to identify unique applicants in the dataset, it is possible that the observed increase in mortgage demand after same-sex marriage legalization is driven by the same same-sex couples having to apply more times after same-sex marriage legalization due to higher rates of denial. In order to account for this possibility, we reestimate Equation 2 and Equation 4 while restricting the sample to applications that have been accepted and originated, as accepted applicants are unlikely to apply again. Further verifying the robustness of our findings, we document similar estimates when restricting our sample to accepted applications in Table 6.

7 Heterogeneous Effects on Gay and Lesbian Couples

Next, we explore the effects on same-sex male and same-sex female couples separately. Sex-specific estimates for Equation 1 and Equation 3 are provided in Figure 5. Sex specific estimates for Equation 2 and Equation 4 are provided in Table 7. Although the effects of early same-sex marriage legalization are similar for gay and lesbian couples, the effects of Obergefell are significantly larger for lesbian couples compared to gay couples in both Obergafell states and Early Legalization States. These differences are in line with prior literature. Several studies document a greater take-up of marriage among lesbian couples relative to gay couples (Carpenter and Gates, 2008; Badgett and Mallory, 2014a; Ramos et al., 2009). The adoption of marriage is likely highly correlated with other investment decisions in relationships, including buying a house together. As a result, if same-sex female couples were more responsive to the increased legal certainty provided by the *Obergefell v. Hodges* ruling, this would translate into a larger increase in mortgage demand relative to same-sex male couples.

The absence of these differences when estimating the effects of early legalization could be explained by differences in the probabilities of moving between state lines as a result of a change in marriage legalization. Marcén and Morales (2022) finds that gay men are significantly more likely to move to states which recently legalized same-sex marriage. We mostly expect differences in moving probabilities to affect estimates for Early Legalization States. All states legalized same-sex marriage after the *Obergefell v Hodges* ruling and same-sex couples have no incentive to move in order to gain access to same-sex marriage.[55] While same-sex female couples may have been more likely to respond to same-sex marriage legalization by formalizing their relationships and purchasing homes, same-sex male couples appear to have been more likely to respond by relocating to states that offered marriage rights. This difference in behavioral responses may explain why we observe similar effects of early legalization on same-sex female and same-sex male couples, but larger effects on same-sex female couples following the *Obergefell v. Hodges* ruling.

8 County Level Analysis

Next, we consider effects at the county-level. The HMDA data contain county identifiers so we are able to measure within-state heterogeneity in the effects of same sex marriage legalization and the *Obergefell v. Hodges* ruling. Same-sex populations choose where to live non-randomly and we have a wide distribution in the proportion of same-sex couples residing in each county (Badgett et al., 2021). Historically, gay and lesbian individuals have congregated in "gayborhoods" in large metropolitan cities in order to escape discrimination but there is growing evidence that sexual minorities are now becoming more geographically dispersed, potentially as a result of increasing acceptance (Ghaziani, 2016; Spring, 2013). Although more research is

[55]However, it is possible that the Obergefell ruling induces certain couples to move from Early Legalization States to Obergefell States.

required in order to understand the relationship between greater social acceptance and spatial dispersal of same-sex couples, we could expect that same-sex marriage legalization and the *Obergefell v. Hodges* ruling might make areas which were previously less accepting, more desirable locations for same-sex couples. There is growing interest in understanding whether greater social acceptance of sexual minorities has resulted in suburbanization (Podmore and Bain, 2020).

In order to understand geographical heterogeneity in the effects of same-sex marriage legalization and the *Obergefell v. Hodges* ruling, we re-estimate our models at the county level. We obtain Rural-Urban Continuum Codes to identify counties as either metropolitan, suburban or other (Parker, 2013).[56] We re-estimate Equation 2 and Equation 4 for urban, suburban, and other counties. Estimates are presented in Table 8. Estimates suggest that effects are driven almost entirely by changes in metropolitan areas.

We note that there may be differences in HMDA coverage by county type. For example, rural counties tend to have a higher share of cash purchases and are less comprehensively covered in HMDA. Such under-reporting is likely concentrated in "other" counties and is unlikely to vary with the legalization of same-sex marriage or differentially affect applications from same-sex versus different-sex couples. Nonetheless, in Table A4, we drop counties known to have substantial under-reporting and find estimates consistent with those in Table 8.[57]

Overall, we find little evidence of suburbanization of gay and lesbian couples following same-sex marriage legalization and the *Obergefell v. Hodges* ruling. Although we find no evidence of suburbanization, the HMDA data only allows us to observe

[56] Rural-Urban Continuum codes are produced by the United States Department of Agriculture and allow us to differentiate between metropolitan, suburban and other counties by population size.

[57] (Johnson and Todd, 2019) finds little evidence of pervasive under-reporting of rural HMDA loans and finds that under-reporting is concentrated in in a minority of rural counties and Indian reservations. They identify a set of 16 counties with particularly low HMDA coverage ratios (under 60%). In Table A4, we show that estimates are consistent even after dropping these low reporting counties.

mortgage applications at the county level. There may be within county movements that we are unable to capture in our estimates.

9 Conclusion

This paper explores the effects of same-sex marriage legalization and the 2015 *Obergefell v. Hodges* ruling on mortgage demand from same-sex couples relative to different-sex couples. We first replicate findings from Miller and Park (2018) and show that early same-sex marriage legalization increases mortgage demand from same-sex couples relative to different-sex couples. Thereafter, we explore the effect of the 2015 ruling itself. Although the ruling expanded access to same-sex marriage, it is not immediately apparent that it would increase mortgage demand in the same-way that early legalization did. Early Legalization States may be systematically different from late legalization states in terms of the underlying demand for same-sex marriage and mortgage credit from same-sex couples. We find that the ruling not only increased mortgage demand from same-sex couples living in states which previously did not have legal same-sex marriage but also increased mortgage demand from same-sex couples living in states which had already legalized same-sex marriage. We then separately estimate the effects of the ruling on same-sex female couples and same-sex male couples. In line with the literature exploring the effects on marriage take-up, we find significantly larger effects on same-sex female couples (Carpenter and Gates, 2008; Badgett and Mallory, 2014a; Ramos et al., 2009). Thereafter, we exploit county-level data to explore within-state heterogeneity. We find that the effects are almost entirely driven by changes in mortgage demand in metropolitan counties. We also find little evidence of the ruling resulting in suburbanization of same-sex couples.

We contribute to a growing literature exploring the effects of same-sex marriage legalization by highlighting the important role of national legislation shaping outcomes

for sexual minorities. A ruling by the Supreme Court not only expanded access to same-sex marriage but further cemented the rights of sexual minorities who already had access to many of these rights.

Given the central role of the Supreme Court in shaping U.S. law and policy, the findings of this study may have implications beyond same-sex marriage legalization and policies affecting sexual minorities. Our findings suggest a broader influence of landmark judicial decisions and highlight the importance of considering the wider impacts of such rulings, beyond their immediate legal scope.

10 Figures

Figure 1: Scatter Plot Comparing HMDA Data to ACS Data

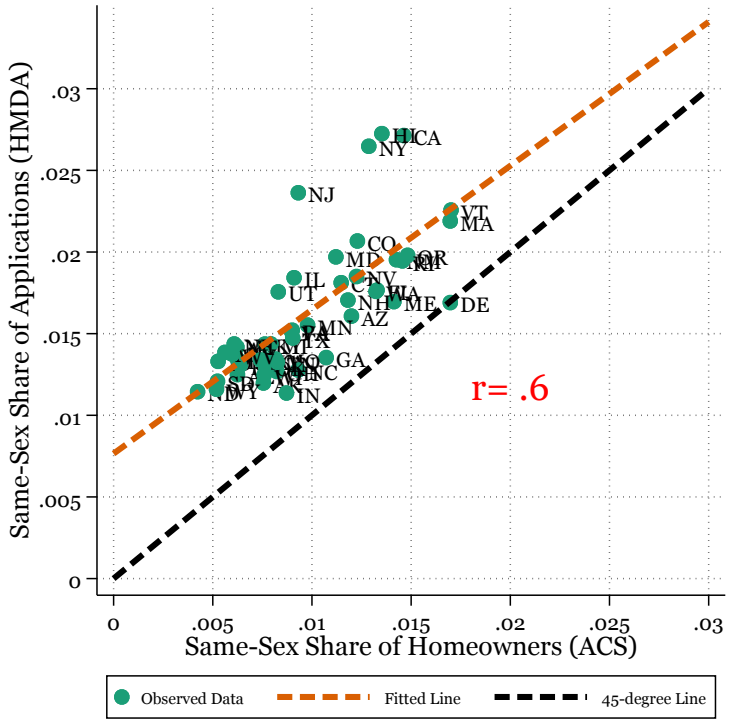

Figure 1. Source: HMDA (Consumer Financial Protection Bureau, 2023) and American Community Survey (ACS)(Flood et al., 2023).
Notes: The figure presents a scatter plot and a line of best fit comparing the share of same-sex applications in the HMDA dataset to the share of same-sex homeowners in the ACS. We use data from the years 2008-2019 because several researchers have documented problems with using ACS data in order to identify same-sex couples in earlier years (Gates and Steinberger, 2009; Badgett et al., 2021).

Figure 2: Trends in Mortgage Application Rates from same-sex and difference-sex couples from 1998-2019

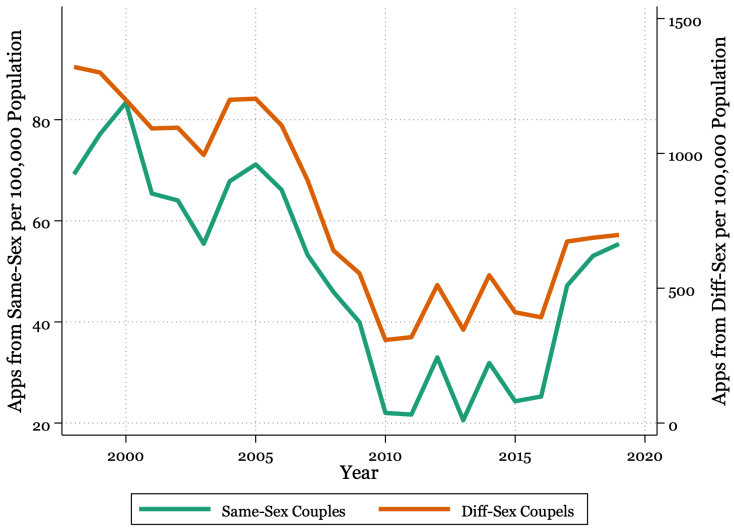

Figure 2. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The figure presents trends in the number of applications from same-sex and different-sex couples per 100,000 population in the HMDA Dataset for the years 1998-2019.

Figure 3: Estimates from Equation 1 - The Effect of Same-Sex Marriage Legalization on Mortgage Demand from Same-Sex Couples Relative to Different-Sex Couples

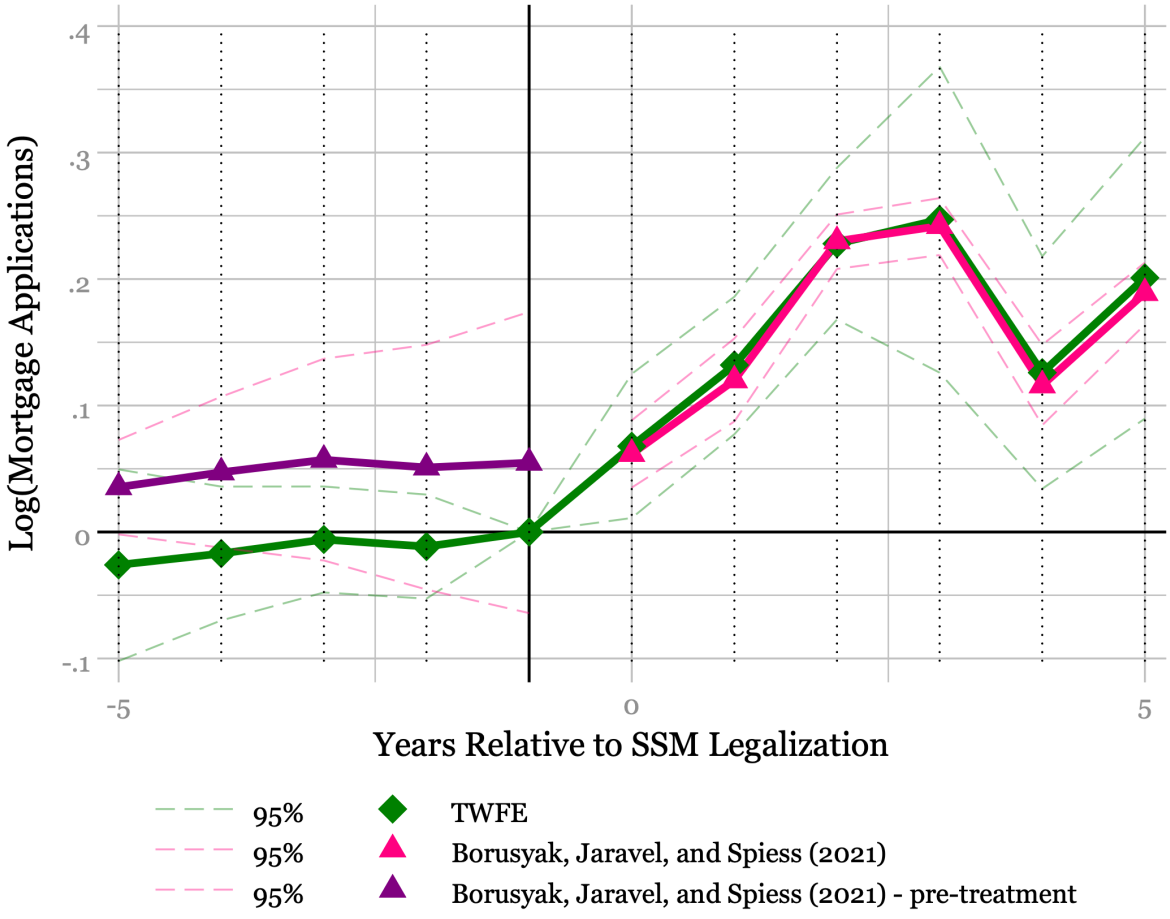

Figure 3. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The figure depicts the effects of same-sex marriage legalization on the mortgage demand of same-sex couples in Early Legalization States. The figure presents estimates from Equation 1. Estimations include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Figure 4: Estimates from Equation 3 - The Effect of the *Obergefell v. Hodges* Ruling on Mortgage Demand from Same-Sex Couples Relative to Different-Sex Couples

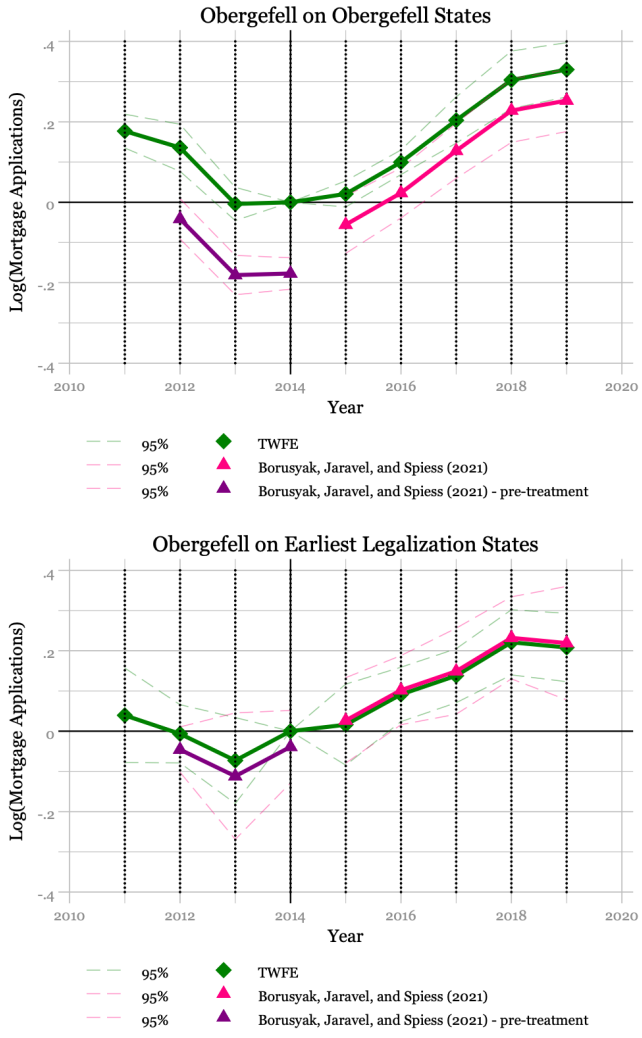

Figure 4. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The figure depicts the effect of the *Obergefell v. Hodges* ruling on the mortgage demand of same-sex couples in Obergefell States and Earliest Legalization States. State categories are available in Table 1. The figures present estimates from Equation 3. Estimations include controls for domestic partnership laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Figure 5: Estimates from Equation 1 & Equation 3 - The Effect of Same-Sex Marriage Legalization and *Obergefell v. Hodges* on Mortgage Demand from Gay and Lesbian Couples Relative to Different-Sex Couples

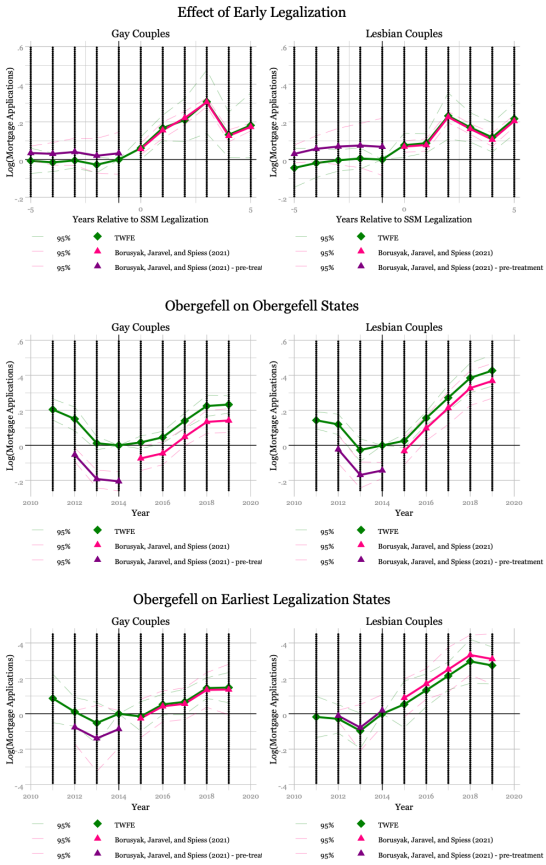

Figure 5. Source: HMDA (Consumer Financial Protection Bureau, 2023
Notes: The first row depicts the effects of early same-sex marriage legalization on the mortgage demand of same-sex male and same-sex female couples. The figures present estimates from Equation 1. Estimations include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two rows depict the effect of the *Obergefell v. Hodges* ruling on the mortgage demand of same-sex male and same-sex female couples in Obergefell States and Earliest Legalization States. State categories are available in Table 1. The figures present estimates from Equation 3. Estimations include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

11 Table

Table 1: Same-Sex Marriage Legalization Year

State	State	Year of Legalization	Method	Type
MA	Massachusetts	2004	Judicial	Earliest Legalization States
CT	Connecticut	2008	Judicial	
IA	Iowa	2009	Judicial	
VT	Vermont	2009	Legislative	
DC	District of Columbia	2010	Legislative	
NH	New Hampshire	2010	Legislative	
NY	New York	2011	Legislative	
ME	Maine	2012	Referendum	Expanded Early Legalizeration States
WA	Washington	2012	Legislative	
DE	Delaware	2013	Legislative	
MD	Maryland	2013	Referendum	
MN	Minnesota	2013	Legislative	
RI	Rhode Island	2013	Legislative	
CA	California	2013	Judicial	
HI	Hawaii	2013	Legislative	
NJ	New Jersey	2013	Judicial	
NM	New Mexico	2013	Judicial	
AK	Alaska	2014	Judicial	
AZ	Arizona	2014	Judicial	
CO	Colorado	2014	Judicial	
ID	Idaho	2014	Legislative	
IL	Illinois	2014	Legislative	
IN	Indiana	2014	Judicial	
MT	Montana	2014	Judicial	
NC	North Carolina	2014	Judicial	
NV	Nevada	2014	Judicial	
OR	Oregon	2014	Judicial	
PA	Pennsylvania	2014	Judicial	
UT	Utah	2014	Judicial	
WI	Wisconsin	2014	Judicial	
WV	West Virginia	2014	Judicial	
OK	Oklahoma	2014	Judicial	
VA	Virginia	2014	Judicial	
SC	South Carolina	2014	Judicial	
AL	Alabama	2015	Supreme Court	Obergefell States
AR	Arkansas	2015	Supreme Court	
FL	Florida	2015	Supreme Court	
GA	Georgia	2015	Supreme Court	
KS	Kansas	2015	Supreme Court	
KY	Kentucky	2015	Supreme Court	
LA	Louisiana	2015	Supreme Court	
MI	Michigan	2015	Supreme Court	
MS	Mississippi	2015	Supreme Court	
MO	Missouri	2015	Supreme Court	
ND	North Dakota	2015	Supreme Court	
NE	Nebraska	2015	Supreme Court	
OH	Ohio	2015	Supreme Court	
SD	South Dakota	2015	Supreme Court	
TN	Tennessee	2015	Supreme Court	
TX	Texas	2015	Supreme Court	

Table 1. Source: Sansone (2019)
Notes: The table depicts the year when same-sex marriage was legalized in each U.S. state, the method by which it was legalized, and categorizes each state as either an Earliest Legalization State, an Expanded Early Legalization State, or an Obergefell State.

Table 2: Summary Statistics by Legalization Year

	Before 2011	2012-2014	2015
Share of Mortgage Apps from Same-Sex Couples	0.075	0.062	0.055
	(0.022)	(0.017)	(0.013)
Share of BRFSS Same-Sex Couples	0.034	0.029	0.029
	(0.013)	(0.011)	(0.009)
Share of ACS Same-Sex Couples	0.016	0.012	0.010
	(0.008)	(0.004)	(0.003)
Domestic Partnership Law	0.014	0.285	0.000
	(0.117)	(0.452)	(0.000)
Unemployment Rate	5.396	5.880	5.756
	(1.661)	(2.155)	(2.002)
Proportion White	0.790	0.799	0.796
	(0.098)	(0.091)	(0.077)
Proportion of Population under 25	0.323	0.340	0.343
	(0.014)	(0.023)	(0.027)
Proportion of Population 25-44	0.278	0.279	0.272
	(0.023)	(0.020)	(0.019)
Observations	154	616	352

mean coefficients; sd in parentheses

Table 2. Source: HMDA (Consumer Financial Protection Bureau, 2023), Behavioral Risk Factor Surveillance System (BRFSS) (CDC, 1990-2002), and American Community Survey (ACS)(Flood et al., 2023).
Notes: The table presents summary statistics for states by the year of same-sex marriage legalization for the years 1998-2019.

Table 3: Summary Statistics by Applicant Type

Full Sample: 1998-2019			
	Same-Sex: Male	Same-Sex: Female	Different Sex
Loan Denied	0.148	0.175	0.107
	(0.071)	(0.105)	(0.054)
FHA Loan	0.313	0.303	0.178
	(0.160)	(0.161)	(0.104)
Different Race Co-Applicant	0.035	0.036	0.045
	(0.028)	(0.031)	(0.034)
Annual Income (1000's of USD)	114.461	87.576	102.325
	(59.028)	(63.994)	(57.166)
Loan Amount (1000's of USD)	173.615	157.862	201.931
	(86.311)	(73.961)	(87.032)
Observations	1144	1145	1148
Detailed Sample: 2018-2019			
	Same-Sex: Male	Same-Sex: Female	Different Sex
Interest Rate	4.791	4.686	4.631
	(1.487)	(0.386)	(0.540)
Property Value (1000's of USD)	310.918	276.349	359.571
	(132.453)	(123.777)	(134.281)
Debt-to-Income Ratio	40.754	42.177	38.933
	(1.858)	(1.737)	(1.696)
Applicant Age	38.369	41.277	42.240
	(1.912)	(2.020)	(1.874)
Share with Parent-Child Age Difference	0.383	0.427	0.043
	(0.049)	(0.082)	(0.012)
Observations	104	105	106

mean coefficients; sd in parentheses

Table 3. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The table provides summary statistics for applications where the applicants are both of the same-sex and male, same-sex and female, and different-sex. The first panel uses data from 1998-2019. The second panel only provides statistics for the year 2018-2019 because these variables are only provided in 2018 onwards in the HMDA data.

Table 4: Estimates from Equation 2 - The Effect of Same-Sex Marriage Legalization on Mortgage Demand from Same-Sex Couples Relative to Different-Sex Couples

	Effect of Early Legalization	
	(1) TWFE	(2) Borusyak
SSM X Same-Sex Couple	0.11437**	0.12304***
	(0.044)	(0.009)
Observations	1734	1734
State-Year FE	Yes	Yes
Year-Orientation FE	Yes	Yes
State-Orientation FE	Yes	Yes
P-Value	.00039	0
Wild Cluster P-Value	.003	-

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The table provides estimates from Equation 2 of the effect of same-sex marriage legalization on the mortgage demand of same-sex couples in Early Legalization States. The first column provides estimates using the two way fixed effects estimator and the second column presents estimates using the Imputation Estimator developed by Borusyak et al. (2021). Estimations include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Table 5: Estimates from Equation 4 - The Effect of the *Obergefell v. Hodges* Ruling on Mortgage Demand From Same-Sex Couples Relative to Different-Sex Couples

Obergefell on Obergefell States		
	(1) TWFE	(2) Borusyak
Obergefell X Same-Sex Couple	0.11636***	0.11636***
	(0.017)	(0.033)
Observations	288	288
State FE	Yes	Yes
Year FE	Yes	Yes
Orientation FE	Yes	Yes
P-Value	0	.00038
Wild Cluster P-Value	0	-
Obergefell on Early Legalization States		
	(1) TWFE	(2) Borusyak
Obergefell X Same-Sex Couple	0.14533***	0.14591***
	(0.016)	(0.052)
Observations	108	108
State FE	Yes	Yes
Year FE	Yes	Yes
Orientation FE	Yes	Yes
P-Value	.00025	.00506
Wild Cluster P-Value	.01502	-

Table 5. HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The table provides estimates from Equation 4 of the effect of the *Obergefell v. Hodges* ruling on mortgage demand of same-sex couples in Obergefell States (first panel) and Earliest Legalization States (second panel). State categories are available in Table 1. The first column provides estimates using the two-way fixed effects estimator and the second column presents estimates using the Imputation Estimator developed by Borusyak et al. (2021). Estimations include controls for domestic partnership laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Table 6: Estimates from Equation 2 & Equation 4 - Only Biracial Couples and Only Accepted Applications

Early Legalization States				
	Only Biracial		Only Accepted Apps	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
SSM X Same-Sex Couple	0.05324	0.07352***	0.12253***	0.13254***
	(0.061)	(0.025)	(0.025)	(0.010)
Observations	1708	1721	1734	1734
State-Year FE	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes
Obergefell on Obergefell States				
	Only Biracial		Only Accepted Apps	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
Obergefell X Same-Sex Couple	0.15266***	0.15390***	0.14946***	0.14957***
	(0.035)	(0.038)	(0.015)	(0.029)
Observations	621	621	630	630
State-Year FE	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes
Obergefell on Early Legalization States				
	Only Biracial		Only Accepted Apps	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
Obergefell X Same-Sex Couple	0.30115***	0.30174***	0.18780***	0.18827***
	(0.072)	(0.056)	(0.031)	(0.059)
Observations	107	107	108	108
State-Year FE	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6. Source: HMDA (Consumer Financial Protection Bureau, 2023)

Notes: The first panel depicts the effects of early same-sex marriage legalization on mortgage demand while restricting the sample to either biracial couples (left) or accepted applications only (right). This panel provides estimates from Equation 2. Estimations include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effects of the *Obergefell v. Hodges* ruling on mortgage demand while restricting the sample to either biracial couples (left) or accepted applications (right) in Obergefell States (second panel) and Earliest Legalization states (third panel). State categories are available in Table 1. These panels provide estimates from Equation 4. Estimations include controls for domestic partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. Columns 1 and 3 provide two-way fixed effects estimates while columns 2 and 4 provide the Imputation Estimator developed by Borusyak et al. (2021). All estimates are weighted by state population and standard errors are clustered at the state level.

Table 7: Estimates from Equation 2 & Equation 4 - Gay and Lesbian Couples

Early Legalization States				
	Gay		Lesbian	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
SSM X Same-Sex Couple	0.12723***	0.13266***	0.09790***	0.11009***
	(0.038)	(0.010)	(0.029)	(0.011)
Observations	1734	1734	1734	1734
State-Year FE	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes
Obergefell on Obergefell States				
	Gay		Lesbian	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
Obergefell X Same-Sex Couple	0.04184**	0.04183	0.19606***	0.19606***
	(0.017)	(0.029)	(0.024)	(0.041)
Observations	288	288	288	288
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes
Obergefell on Early Legalization States				
	Gay		Lesbian	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
Obergefell X Same-Sex Couple	0.06861***	0.06934**	0.22955***	0.23030***
	(0.015)	(0.035)	(0.017)	(0.042)
Observations	108	108	108	108
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The first panel depicts the effects of early same-sex marriage legalization on the mortgage demand of same-sex male and same-sex female applicants. This panel presents estimates from Equation 2. Estimations include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the mortgage demand of same-sex male and same-sex female applicants in Obergefell States and Earliest Legalization states. State categories are available in Table 1. These panels present estimates from Equation 4. Estimations include controls for domestic partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. Columns 1 and 3 provide two-way fixed effects estimates while columns 2 and 4 provide the Imputation Estimator developed by Borusyak et al. (2021). All estimates are weighted by state population and standard errors are clustered at the state level.

Table 8: Estimates from Equation 2 & Equation 4- County Level Analysis

Early Legalization States

	Metro		Suburb		Other	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
SSM X Same-Sex Couple	0.09839***	0.10807***	0.02969	0.05421**	0.03516	0.03162
	(0.023)	(0.007)	(0.043)	(0.022)	(0.047)	(0.034)
Observations	29444	29619	14168	14462	6152	6289
County-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
County-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
Orientation-Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Obergefell on Obergefell States

	Metro		Suburb		Other	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
Obergefell X Same-Sex Couple	0.10736***	0.11537***	-0.09192*	-0.07620**	-0.00865	0.00555
	(0.017)	(0.040)	(0.052)	(0.032)	(0.043)	(0.042)
Observations	12649	12649	6561	6561	2739	2739
Domestic Partnership	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes

Obergefell on Early Legalization States

	Metro		Suburb		Other	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
Obergefell X Same-Sex Couple	0.15432***	0.15431***	0.00725	0.01491	0.04058	0.07342
	(0.017)	(0.045)	(0.038)	(0.127)	(0.081)	(0.129)
Observations	630	630	287	287	244	244
Domestic Partnership	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 8. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: This table presents estimates for the effects of same-sex marriage legalization and the *Obergefell v. Hodges* ruling for metropolitan, suburban or other counties based on rural urban county continuum codes Parker (2013). The first panel depicts the effects of early marriage legalization on the demand for mortgage credit . This panel presents estimates for Equation 2. Estimates include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the demand for mortgage credit in Obergefell States and Earliest Legalization States. State categories are detailed in Table 1. These panels present estimates for Equation 4. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. Columns 1, 3, and 5 provide estimates using the two-way fixed effects estimator while columns 2, 4, and 6 use the imputation estimator developed by Borusyak et al. (2021). All estimates are weighted by state population and standard errors are clustered at the state level.

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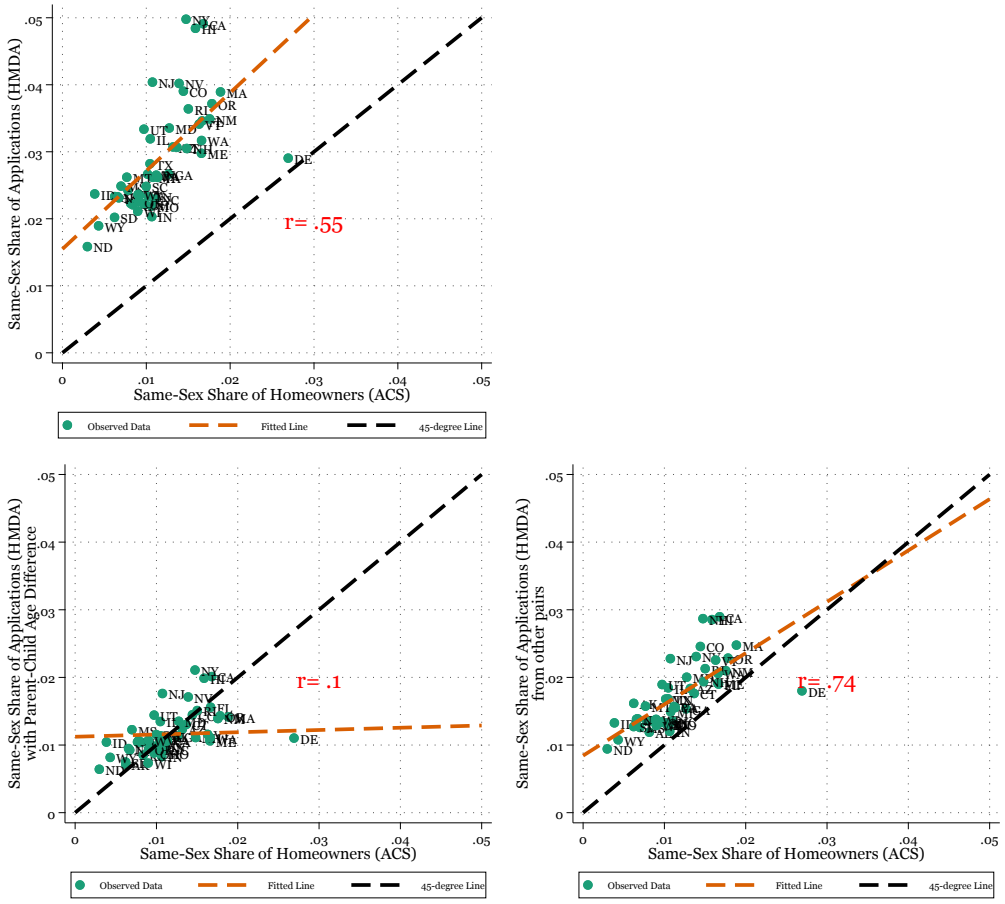
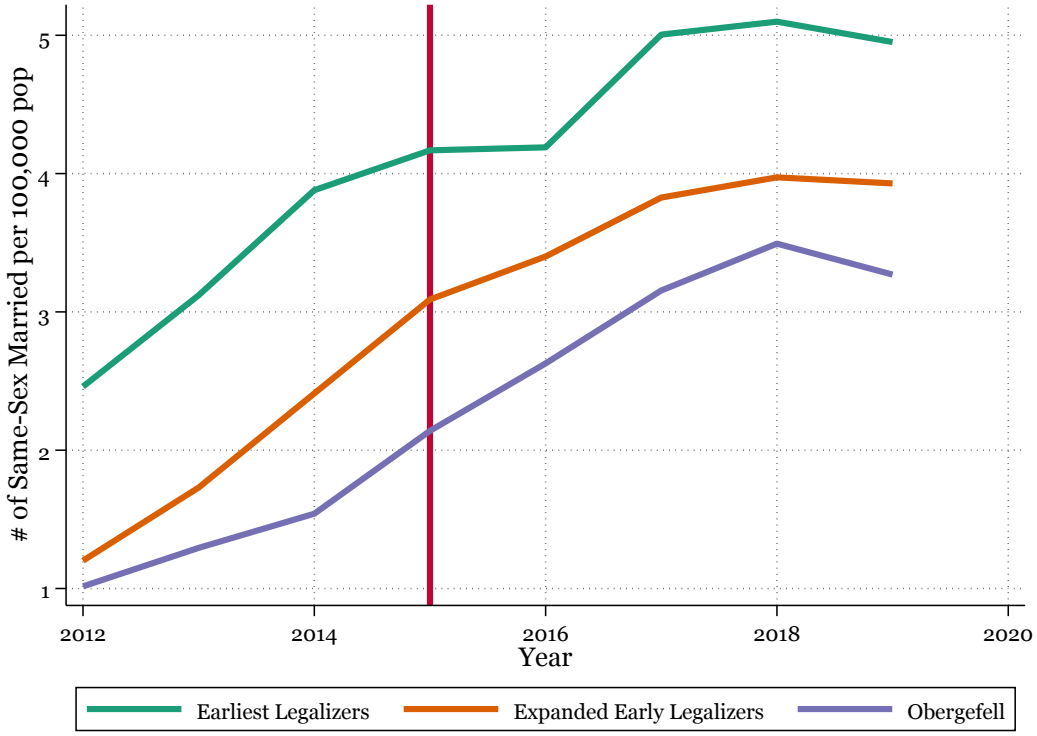
A Additional Tables and Figures

Figure A1: Scatter Plot Comparing HMDA Data to ACS Data by Age Differences for 2018-2019



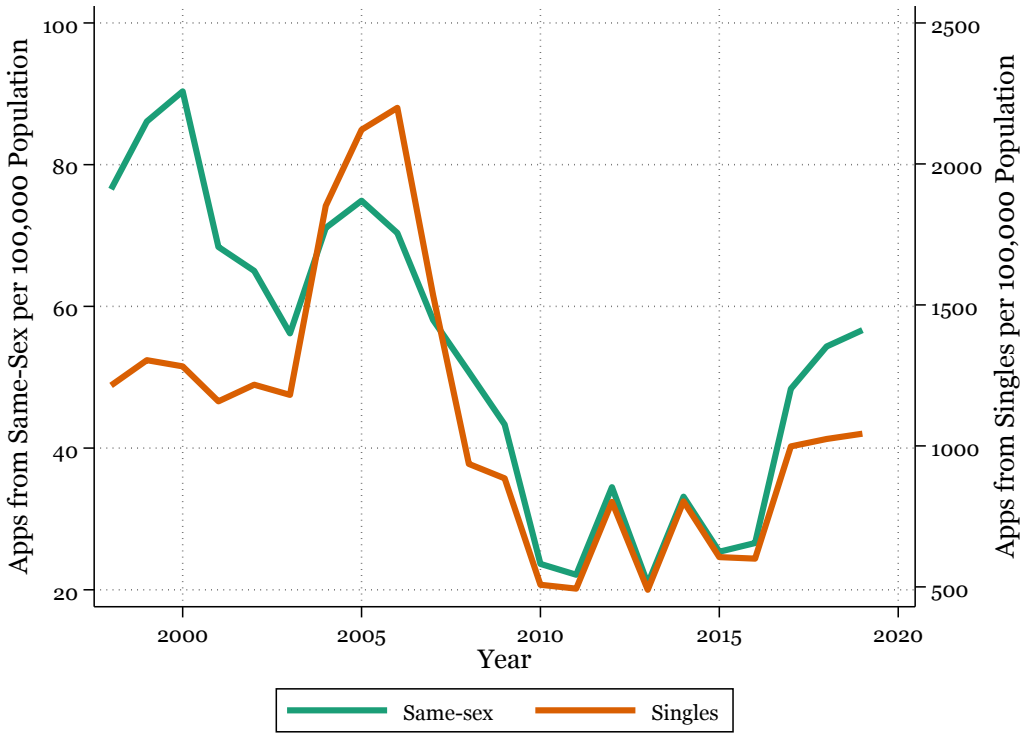
Appendix Figure A1. Source: HMDA (Consumer Financial Protection Bureau, 2023) and American Community Survey (ACS)(Flood et al., 2023).
Notes: The first figure presents a scatter plot with a line of best fit, comparing the share of same-sex applications in the HMDA dataset to the share of same-sex homeowners in the ACS for the years 2018 and 2019. The subsequent two figures further disaggregate same-sex applications in the HMDA dataset: the second panel shows applications where the applicant and co-applicant's age bins differ by 2–3 bins (representing age differences between 21 and 39 years), and the third panel shows applications with all other age differences.

Figure A2: Estimated Number of Individuals in Same-Sex Marriages per 100,000 Population (ACS)



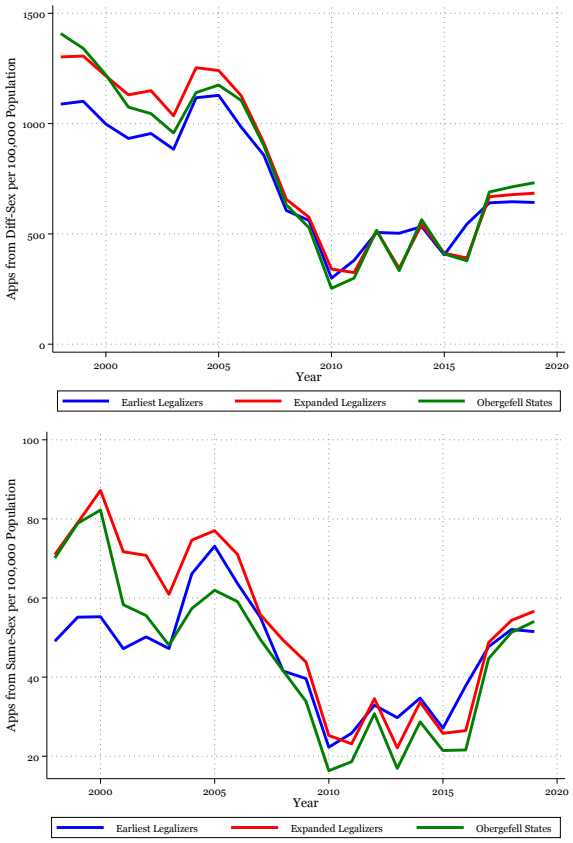
Appendix Figure A2. Source: American Community Survey (ACS)(Flood et al., 2023). Notes: This figure presents estimates of the number of individuals in same-sex married relationships per 100,000 population over time for Earliest Legalization States, Expanded Early Legalization States and Obergefell States.

Figure A3: Trends in Mortgage Application Rates from Same-Sex couples and Single Applicants



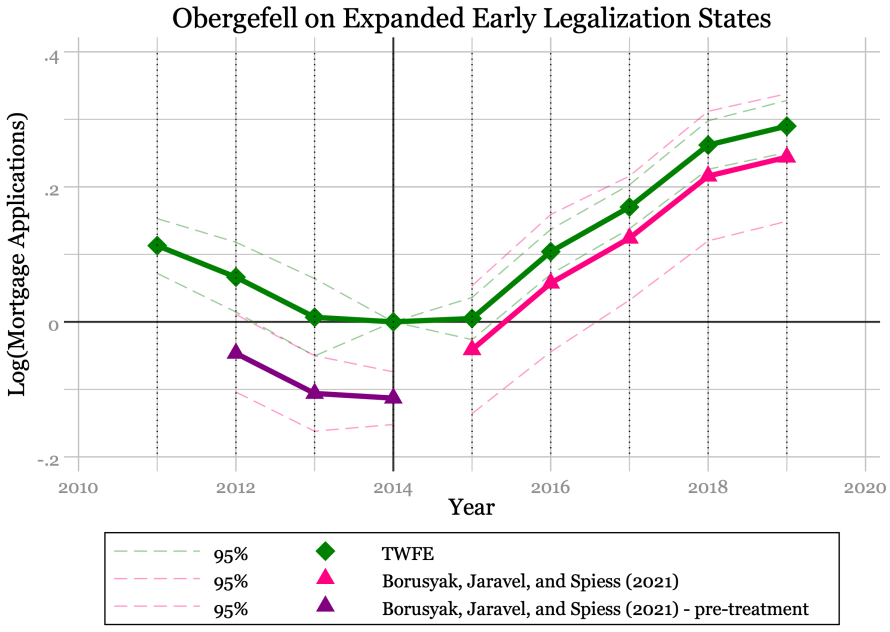
Appendix Figure A3. Source: HMDA (Consumer Financial Protection Bureau, 2023). Notes: The figure presents trends in the number of applications from single applicants and same-sex couples per 100,000 population in the HMDA Dataset for the years 1998-2019.

Figure A4: Trends in Mortgage Application Rates from Same-Sex couples and sinlge Applicants



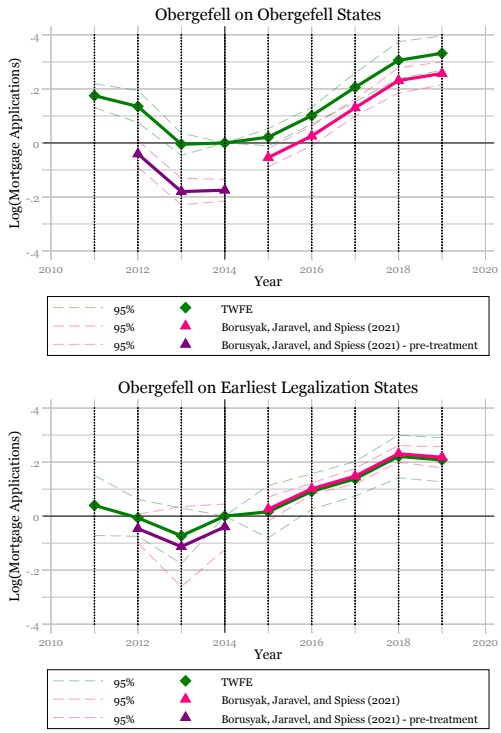
Appendix Figure A4. Source: HMDA (Consumer Financial Protection Bureau, 2023). Notes: The figure presents trends in the number of applications from different-sex and same-sex couples per 100,000 population in the HMDA Dataset for the years 1998-2019 for Earliest Legalization States, Expanded Early Legalization States, and Obergefell States.

Figure A5: Estimates from Equation 3 - The Effect of the *Obergefell v. Hodges* Ruling on Mortgage Demand from Same-Sex Couples Relative to Different-Sex Couples.



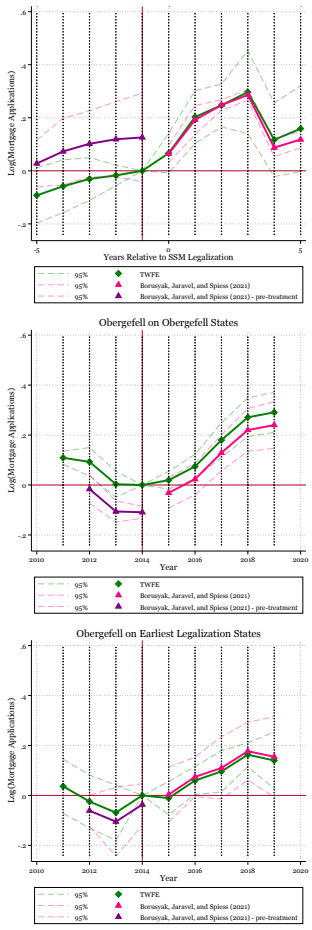
Appendix Figure A5. Source: HMDA (Consumer Financial Protection Bureau, 2023) Notes: The figure depicts the effect of the *Obergefell v. Hodges* ruling on the mortgage demand of same-sex couples in Expanded Early Legalization States. State categories available in Table 1. This figure present estimates for Equation 3. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Figure A6: Estimates from Equation 3 While Including State-Time Fixed Effects and State-Orientation Fixed Effects.



Appendix Figure A6. Source: HMDA (Consumer Financial Protection Bureau, 2023) Notes: The figure depicts the effect of the *Obergefell v. Hodges* ruling on the mortgage demand of same-sex couples in Obergefell States and Earliest Legalization States. State categories are available in Table 1. The figures present estimates from Equation 3. Estimations include controls for domestic partnership laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects, as well as state-time fixed effects and state-orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Figure A7: Estimates from Equation 1 & Equation 3 While Changing the Control Group to Single Applicants



Appendix Figure A7. Source: HMDA (Consumer Financial Protection Bureau, 2023) Notes: The figure depicts the effect of same-sex marriage legalization and the *Obergefell v. Hodges* ruling on the demand for mortgage credit using applications from single applicants as a control group. The first panel depicts the effects of early marriage legalization on the demand for mortgage credit. This panel presents estimates for Equation 1. Estimates include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the demand for mortgage credit in Obergefell States and Earliest Legalization States. State categories available in Table 1. These panels present estimates for Equation 3. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Table A1: Estimates from Equation 2 & Equation 4- Alternative Specifications

Early Legalization States

	No Controls		No Weights		Linear Time Trends	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
SSM X Same-Sex Couple	0.11729***	0.12304***	0.09753**	0.10840***	0.11391***	0.12265***
	(0.028)	(0.009)	(0.039)	(0.024)	(0.030)	(0.009)
Observations	1734	1734	1734	1734	1734	1734
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Orientation Time Trends	No	No	No	No	Yes	Yes

Obergefell on Obergefell States

	No Controls		No Weights		Linear Time Trends	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
Obergefell X Same-Sex Couple	0.11636***	0.11636**	0.11636***	0.09450	0.29250***	0.29250**
	(0.016)	(0.047)	(0.016)	(0.060)	(0.019)	(0.123)
Observations	288	288	288	288	288	288
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Orientation Time Trends	No	No	No	No	Yes	Yes

Obergefell on Early Legalization States

	No Controls		No Weights		Linear Time Trends	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
Obergefell X Same-Sex Couple	0.14719***	0.14719***	0.10401**	0.10401	0.32819***	0.32738***
	(0.013)	(0.038)	(0.038)	(0.094)	(0.016)	(0.117)
Observations	108	108	108	108	108	108
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Orientation Time Trends	No	No	No	No	Yes	Yes

Appendix Table A1. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: This table presents estimates for the effects of same-sex marriage legalization and the *Obergefell v. Hodges* ruling on mortgage demand for several alternative specifications. For the first two columns, I drop all the control variables. In columns 3 and 4, I provide unweighted estimates. In columns 5 & 6, I change the outcome variable to represent the residual of a state specific predicted time trend variable. This is calculated by using only pre-years to estimate a coefficient which measures linear time trends in the outcome variable for each state and then using these coefficients to estimate a linear time trend for each state-year combination. The first panel depicts the effects of early marriage legalization on the demand for mortgage credit . This panel presents estimates for Equation 2. Estimates include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the demand for mortgage credit in Obergefell States and Earliest Legalization states. State categories available in Table 1. These panels present estimates for Equation 4. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. Columns 1, 3, and 5 provide estimates using the two-way fixed effects estimator while columns 2, 4, and 6 use the imputation estimator developed by Borusyak et al. (2021). All estimates are weighted by state population and standard errors are clustered at the state level.

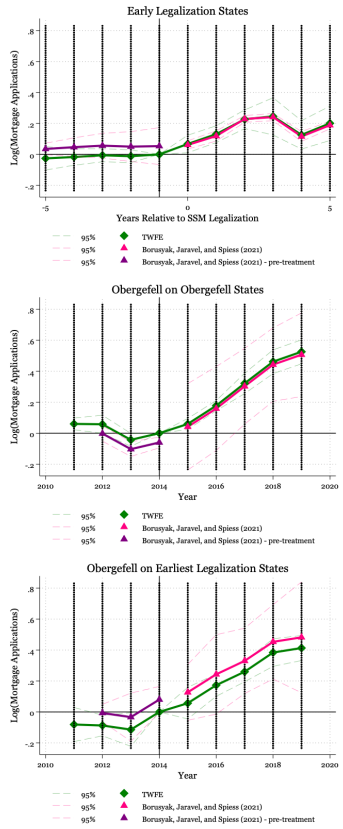
Table A2: Summary Statistic by Applicant Type for Different-Race Applicants

Detailed Sample: 2018-2019			
	Same-Sex: Male	Same-Sex: Female	Different Sex
Interest Rate	6.422	4.743	4.566
	(18.294)	(0.624)	(0.692)
Property Value (1000's of USD)	326.394	277.487	342.341
	(149.663)	(118.718)	(163.985)
Debt-to-Income Ratio	40.292	41.741	39.778
	(4.496)	(3.813)	(4.613)
Applicant Age	38.730	38.782	40.099
	(4.151)	(4.470)	(5.435)
Age Diff over 21 Years	0.249	0.265	0.061
	(0.120)	(0.119)	(0.114)
Observations	103	103	200

mean coefficients; sd in parentheses

Appendix Table A2. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: The table provides summary statistics for different race applications where the applicants are both of the same-sex and male, same-sex and female, and different sex. The table only provides statistics for the year 2018-2019 because these variables are only provided in 2018 onwards in the HMDA data.

Figure A8: Estimates from the Detrended Version of Equation 1 & Equation 3.



Appendix Figure A8. Source: HMDA (Consumer Financial Protection Bureau, 2023) Notes: The figure depicts the effect of same-sex marriage legalization and the *Obergefell v. Hodges* ruling on the demand for mortgage credit. Here, we follow Goodman-Bacon (2021) and detrend the outcome variable. This involves changing the outcome variable to represent the residual of a state specific predicted time trend variable. This is calculated by using only pre-years to estimate a coefficient which measures linear time trends in the outcome variable for each state and then using these coefficients to estimate a linear time trend for each state-year combination. The first panel depicts the effects of early marriage legalization on the demand for mortgage credit . This panel presents estimates for Equation 1. Estimates include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the demand for mortgage credit in Obergefell States and Earliest Legalization states. State categories available in Table 1. These panels present estimates for Equation 3. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Table A3: Estimates from Equation 2 & Equation 4 - Alternative Weights

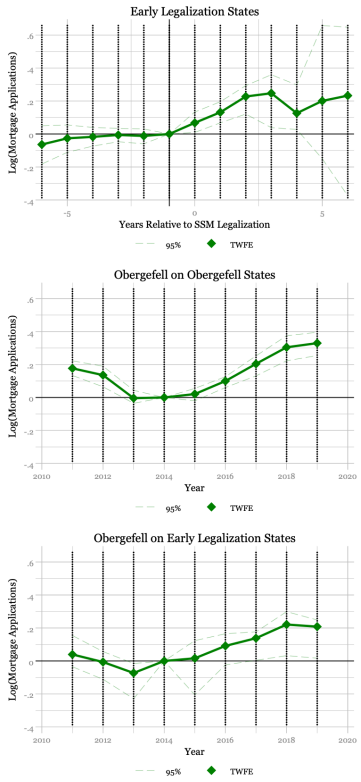
Early Legalization States				
	Weight: Pop over 20		Weight: Homeowning Pop	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
SSM X Same-Sex Couple	0.11412***	0.12347***	0.10005***	0.11043***
	(0.030)	(0.009)	(0.028)	(0.009)
Observations	1734	1734	1530	1530
State-Year FE	Yes	Yes	Yes	Yes
Year-Orientation FE	Yes	Yes	Yes	Yes
State-Orientation FE	Yes	Yes	Yes	Yes
Obergefell on Obergefell States				
	Weight: Pop over 20		Weight: Homeowning Pop	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
Obergefell X Same-Sex Couple	0.11834***	0.11834***	0.11669***	0.11669***
	(0.016)	(0.033)	(0.017)	(0.033)
Observations	288	288	288	288
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes
Obergefell on Early Legalization States				
	Weight: Pop over 20		Weight: Homeowning Pop	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak
Obergefell X Same-Sex Couple	0.14659***	0.14682***	0.14777***	0.14860***
	(0.016)	(0.052)	(0.014)	(0.051)
Observations	108	108	108	108
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

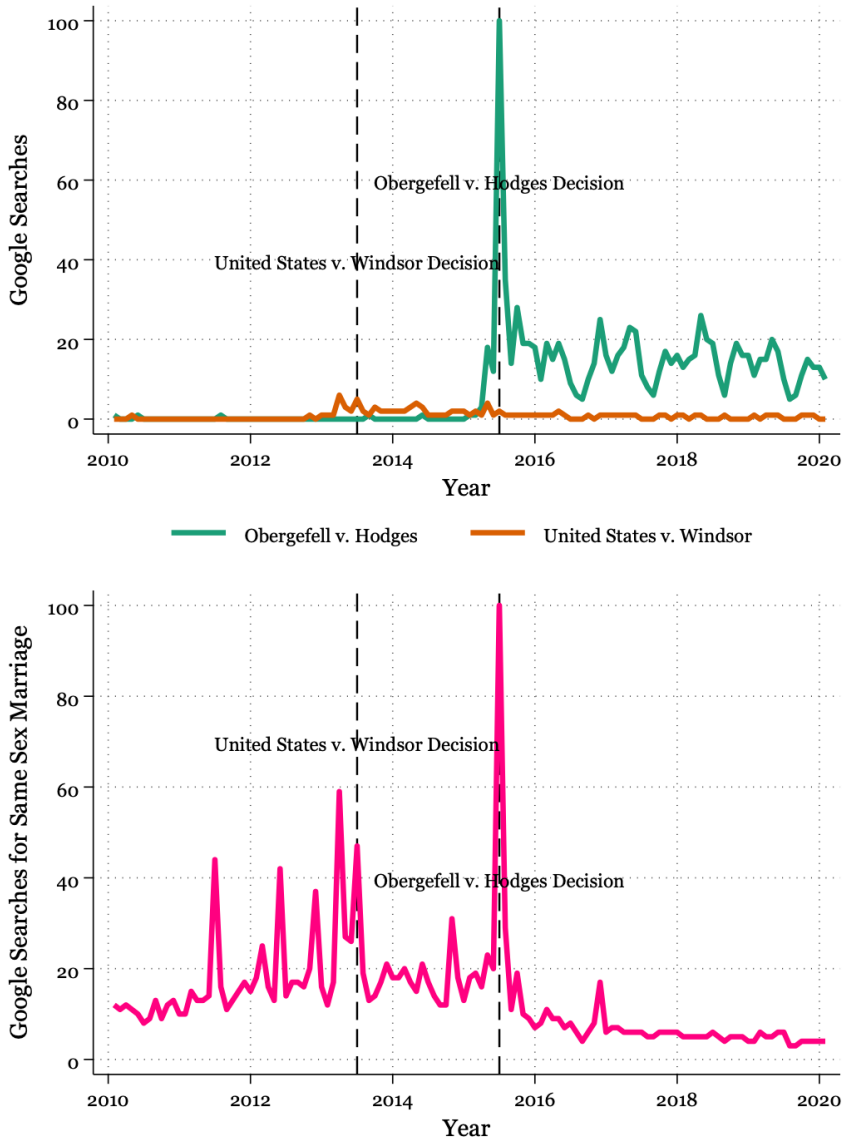
Appendix Table A3. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: This table presents estimates for the effects of same-sex marriage legalization and the *Obergefell v. Hodges* ruling on mortgage demand with several alternative weighting strategies.

Figure A9: Estimates from Equation 1 & Equation 3 with Wild Cluster Bootstrapping.



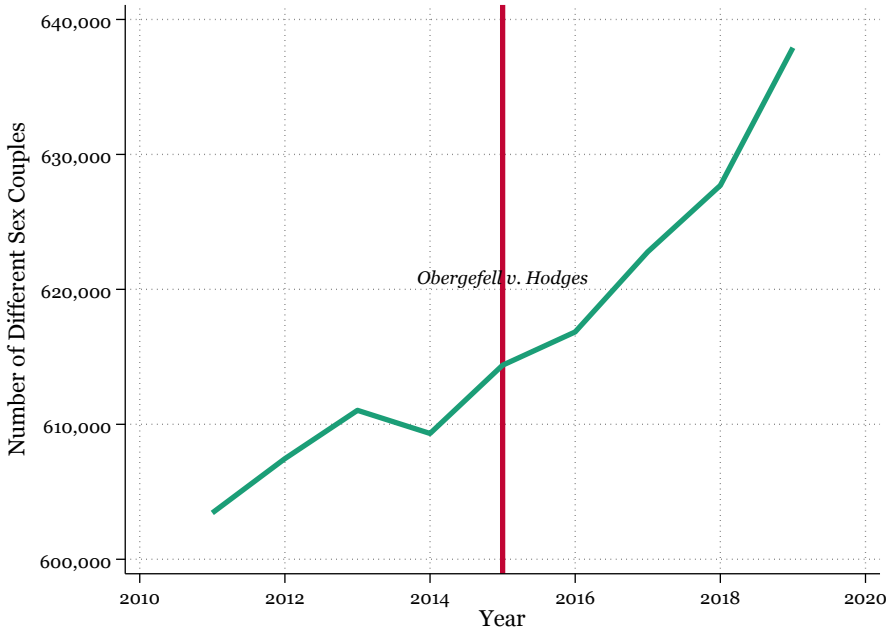
Appendix Figure A9. Source: HMDA (Consumer Financial Protection Bureau, 2023) Notes: The figure depicts the effect of same-sex marriage legalization and the *Obergefell v. Hodges* ruling on the demand for mortgage credit. In order to account for the small number of clusters, we use wild cluster bootstrapping with 999 repetitions Cameron et al. (2008). In order to achieve 999 repetitions, we follow advice from Roodman et al. (2019) and incorporate web weights. The first panel depicts the effects of early marriage legalization on the demand for mortgage credit . This panel presents estimates for Equation 1. Estimates include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the demand for mortgage credit in Obergefell States and Earliest Legalization states. State categories available in Table 1. These panels present estimates for Equation 3. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Figure A10: Google Trends



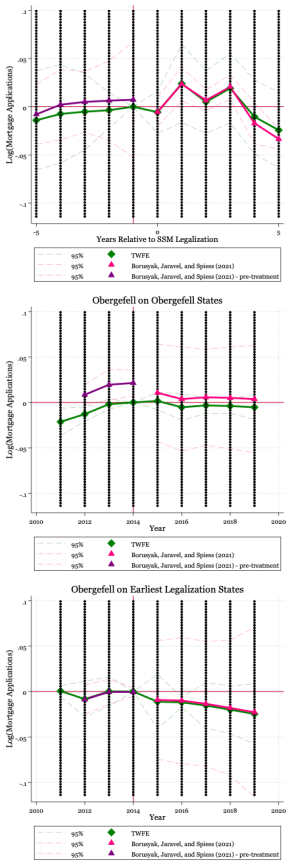
Appendix Figure A10. Source: Google Trends
Notes: This figure presents trends in google search intensities for specific terms. The intensity index is based on search share normalized between 0 and 100. The first graph depicts trends in the search intensity index for the terms "United v. Windsor" and "*Obergefell v. Hodges*". The second figure depicts trends in the search intensity index for the term "Same Sex Marriage".

Figure A11: Number of Different-Sex Married Couples



Appendix Figure A11. Source: American Community Survey
Notes: This figure depicts estimates of the total number of different-sex married couples in the U.S from the American Community Survey for 2011-2019.

Figure A12: Estimates from Equation 1 & Equation 3- Effect on Couple Application vs. Single Filer Applications.



Appendix Figure A12. Source: HMDA (Consumer Financial Protection Bureau, 2023) Notes: The figure depicts the effect of same-sex marriage legalization and the *Obergefell v. Hodges* ruling on the demand for mortgage credit on couple relative to other groups. The first panel depicts the effects of early marriage legalization on the demand for mortgage credit from couple applicants relative to other applications. This panel presents estimates for Equation 1. Estimates include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the demand for mortgage credit in Obergefell States and Earliest Legalization states from couple applicants relative to other applications. State categories available in Table 1. These panels present estimates for Equation 3. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. All estimates are weighted by state population and standard errors are clustered at the state level.

Table A4: Estimates from Equation 2 & Equation 4 - County Level Analysis After Dropping Low Reporting Counties

Early Legalization States

	Metro		Suburb		Other	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
SSM X Same-Sex Couple	0.09839***	0.10807***	0.03049	0.05528**	0.03606	0.03205
	(0.023)	(0.007)	(0.043)	(0.022)	(0.047)	(0.034)
Observations	29444	29619	14134	14428	6120	6256
County-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
County-Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes
Orientation-Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Obergefell on Obergefell States

	Metro		Suburb		Other	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
Obergefell X Same-Sex Couple	0.10736***	0.11537***	-0.09346*	-0.07747**	-0.00865	0.00555
	(0.017)	(0.040)	(0.052)	(0.032)	(0.043)	(0.042)
Observations	12649	12649	6544	6544	2739	2739
Domestic Partnership	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes

Obergefell on Early Legalization States

	Metro		Suburb		Other	
	(1) TWFE	(2) Borusyak	(3) TWFE	(4) Borusyak	(5) TWFE	(6) Borusyak
Obergefell X Same-Sex Couple	0.15432***	0.15431***	0.00725	0.01491	0.04058	0.07342
	(0.017)	(0.045)	(0.038)	(0.127)	(0.081)	(0.129)
Observations	630	630	287	287	244	244
Domestic Partnership	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Orientation FE	Yes	Yes	Yes	Yes	Yes	Yes

Appendix Table A4. Source: HMDA (Consumer Financial Protection Bureau, 2023)
Notes: This table presents estimates for the effects of same-sex marriage legalization and the *Obergefell v. Hodges* ruling for metropolitan, suburban or other counties based on rural urban county continuum codes Parker (2013) after dropping counties low HMDA reporting as per Johnson and Todd (2019). The first panel depicts the effects of early marriage legalization on the demand for mortgage credit . This panel presents estimates for Equation 2. Estimates include controls for domestic partnership laws, state-time fixed effects, orientation-time fixed effects and state-orientation fixed effects. The next two panels depict the effect of the *Obergefell v. Hodges* ruling on the demand for mortgage credit in Obergefell States and Earliest Legalization states. State categories available in Table 1. These panels present estimates for Equation 4. Estimates include controls for Domestic Partnership Laws, unemployment rate, median household income, proportion of the population that is white, under 25 and 25-44. We also include state fixed effects, time fixed effects and orientation fixed effects. Columns 1, 3, and 5 provide estimates using the two-way fixed effects estimator while columns 2, 4, and 6 use the imputation estimator developed by Borusyak et al. (2021). All estimates are weighted by state population and standard errors are clustered at the state level.