The Impact of Same-Sex Marriage Legalization on Adoptions

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Abstract

The legalization of same-sex marriage (SSM) in the United States had many economic impacts on households. This paper aims to investigate the impact of SSM legalization on adoptive households across the United States, using the staggered legalization of states. Using ACS data from 2008-2016, this paper views this impact on households of men and women in same-sex relationships. This paper finds that women in same-sex relationships have a downward trend of adopting. This paper additionally, finds that women in same-sex adoptive households have higher income by 20 percentage points after legalization of SSM, compared to women in non-adoptive same-sex households.

1 Introduction

Not many systems in the United States are as over-stressed and low on resources as the foster care system. The current system of foster care in the United States is huge with over 400,000 children in the program on any given day. This costs the United States millions of dollars yearly in aid for these children. Same-sex households are a group that are unable to produce a child through sexually biological reproductive means. This means these households must usually go through more expensive processes to procure a child for their household. The most common of these methods include fertilization treatments and adoptions, of which adoption is considerably cheaper out of pocket. This means policy impacts and discrimination towards same-sex households are considerably damaging to the adoption and foster care industries. Previous literature emphasizes that the composition of same-sex households changed as a result of SSM legalization. This paper sets out to try and answer a few questions about the impact of SSM on adoption in the United states, in same-sex households, and why this may be happening. The main research question for this paper is, how does SSM change same-sex households' decision to adopt, and do same-sex adoptive households change as a result of SSM, when compared to non-adoptive households.

This question is addressed by using data from the American Community Survey (ACS) portion of Integrated Public Use Microdata Series, an organization that has been creating samples of data that represent the United States households for years. It also does this through two strategies, a SSM legalization strategy and a full adoption legalization strategy. The SSM legalization strategy uses the timing of same-sex marriage legalization in that state. The full adoption legalization strategy uses a hybrid method. Some states, following SSM legalization, passed laws that restricted certain forms of adoption by same-sex households. As a result, the full adoption legalization strategy uses the latest time that adoption is not legally restricted after same-sex marriage is legalized.

This paper begins by linking and identifying same-sex spouses together. It then identifies the different compositions of households (same-sex, different-sex, or single parent). After

this, it identifies children that are adopted by the head of the household. Then, it links the year of legalization of SSM based on the state that the individual is currently living. This paper then analyzes how the impact of SSM changes the composition of same-sex and single parent households that adopt. It answers this by using a triple difference method model using opposite-sex households as a baseline. From there, this paper uses a triple difference within same-sex households to see how the difference between adoptive and non-adoptive households changed.

From here, a triple difference is run using Borusyak, Jaravel, and Spiess difference in difference estimators with a staggered treatment timing, and the difference in difference imputation method. Both event study and ATET results are reported. This is used to tell whether a same-sex or single parent household is more or less likely to adopt after the legalization method. With this triple difference we can see that women in same-sex households decreased the amount that they adopted between 1.3 and 1.5 percentage points based on the method of timing. This is interesting as the original hypothesis of this paper believed that adoption would increase, as approval odds for foster care adoptions were higher with two individual's incomes. Unfortunately, this model runs into problems with pre-trends for the model using women in same-sex households at the 0.05 percent p-value. The ATET results for all other types of households were not significant.

After this, a simple difference in difference model is run on the straight households individually and the two types of same-sex households to see if within themselves the trend of them adopting changed. Women in same-sex households once again showed a decrease in the rate of adoption, but had problems with pre-trends once again.

Even though the problems with pre-trends are significant, the decrease in adoptions for women in same-sex households seems to be a repeated trend. Here, this paper decides to investigate why a decrease in adoptions may be happening and whether it is related to same-sex marriage legalization.

The sample is then cut down to only same-sex households. This paper runs a triple

difference to see the impact on income, to see how being an adoptive household changed after SSM is legalized. From this result, it can be seen that after SSM legalization, adoptive households income for women in same-sex relationships increased 20 percentage points. This could be a reason that women in same-sex relationships adopted at a much lower rate after SSM legalization. We can see the opposite effect for men in same-sex relationships, with some timings being insignificant or a low level of statistical significance.

After this a simple difference in difference is run on adoptive and non-adoptive households separately, for women in same-sex households to see if each group changed their income or not. This finds that non-adoptive households do not make statistically significant changes to their income after legalization, and that most of the changes in income that occur immediately after the legislation are by adoptive households. This seems to indicate something significant happening to women in adoptive same-sex households due to SSM legalization.

This paper theorizes that the reason for this change in income is from women in same-sex households gaining access to private insurance through their partner, which could have coverage for in-vitro fertilization. This would mean that families that had lower levels of income that wanted children previously, had no choice but to adopt. Now these households had the option of either choice, causing lower income households to use in-vitro fertilization rather than to adopt.

Difference in difference and event study models are run testing whether private insurance uptake in adoptive households and non-adoptive households were significantly different after SSM legalization. This paper finds that there is no difference in private insurance uptake for women or men in adoptive same-sex households compared to non-adoptive same-sex households.

Finally, a triple difference is run on the four quartiles of the data based on household income for men and women in same-sex households, to see if certain quartiles drive the change in adoptions. From this test it can be shown that for the SSM, the lower two quartiles of income are what drove the decrease in adoptions for women in same-sex relationships. Men

in same-sex households had an impact on their second quartile.

This puts up some evidence that in-vitro fertilization could have a negative impact on adoptions for women in same-sex households, but further research needs to be completed. Future tests and plans include seeing how the amount of in-vitro fertilization procedures or facilities per state changed due to SSM.

2 Literature Review

There are two branches of literature that exist that this paper aims to combine. The first of which being how SSM legalization changed household decisions for same-sex households. The second branch discusses how changes to a household through something such as a subsidy has an impact on the decision of households and why adoption is a more positive outcome compared to not being adopted.

Relating to the first branch is the paper "Effects of Access to Legal Same-Sex Marriage on Marriage and Health"(**?**). This paper finds that SSM legalization led to an increase in marriages in both men and women in same-sex households, and that men significantly increased their health insurance, access to care, and healthcare utilization. Another paper is "A labor of love: The impact of same-sex marriage on labor supply" (**?**). This paper checks the labor supply of same-sex households compared to different-sex households. This is done using CPS and ACS data from 2003-2015. They find that women in a same-sex relationship with lower earnings decrease hours of work 2.5 times more than their partners. They also find that gay men do not alter hours in paid labor. Their time-use data shows that lesbian partners also reallocate work hours to care labor (unpaid work taking care of children/adults as a primary activity). They also test whether the type of method of legalization effects states differently across and find no evidence of this. They did not look into aspects of same-sex households that adopted children and state that it is non-previously looked at group. Another paper is "Revisiting the Income Tax Effects of Legalizing Same-Sex Marriages" (**?**). This paper looks at the tax effect on different states of those states legalizing SSM, showing

that 23 states end up making a net gain from legalization while 21 states end up with a net loss in tax revenue. This could show that different states have differing impacts from SSM legalization. This uses difference in difference in the old, non-staggered style, so the results are not up to date.

The next paper is titled "Health Insurance and Labor Force Participation: What legal recognition does for Same-Sex couples." (**?**). This paper showed that as a result of the ability to marry, lesbian households decreased their labor force participation, which is mainly due to one individual making the decision to leave the work force. A contrasting paper "Effect of Registered Partnership on Labor Earnings and Fertility for Same-Sex Couples: Evidence From Swedish Register Data" (**?**) discusses and works in Sweden. This work looks into the effect registering in a partnership has on Labor Earnings and fertility, finding that same-sex relationships that form partnerships do not change their income, while opposite-sex couples do, even when controlling for children. The final important paper in this branch is "Pink work: Same-Sex marriage, employment and discrimination." (**?**). This paper looks at how access to marriage led to individual and joint probabilities lead to and increase in same-sex couples. It also suggests that this is mainly led by better attitudes and less discrimination towards same-sex individuals. This is relevant as it is one of the only papers to have used second parent adoption legalization as a part of their strategy, though only as a legal level to see how employment changes. This paper also looks at fertility rates for same-sex couples and shows that SSM legalization does not have an impact on the number of children in a household, though they do not specify between a child, an adopted child, a stepchild, or a foster child. All of these papers show gains that same-sex couples made resulting from SSM legalization occurring. These papers show evidence that same-sex households improved due to same-sex marriage with more income and more benefits.

The first paper to mention in this branch is the paper "The Economics of the Adoption of Children from Foster Care" (**?**). This paper reviews the impact of a new subsidy given to adoptive parents by the government and the effect that it would have on foster

care adoptions and on international adoptions. They show that it is an effective tool to increase the number of foster care adoptions. In relation to this paper, this is similar to the benefits Same-Sex couples received from the legalization of SSM. The next paper "Adoption Subsidies and Placement Outcomes for Children in Foster Care" (**?**) discusses similar gains in another program which is the Adoption Assistance and Child Welfare Act of 1980 which gave subsidies to families adopting special needs children. This paper found evidence that the benefits increased adoptions of special needs children and that most of the increase is from adoptions be foster care parents. This is important as most LGBTQ+ adoptive parents are actually foster parents first prior to becoming an adoptive parent. These papers and the literature generally show that increases in subsidies/money for households to adopt, push households across the margin to adopt more children.

3 Empirical Strategy

This paper essentially forms two branches in possible strategy for legalization relating to both adoption and SSM. The Obergefell decision on June 2015, from the Supreme Court forced some states to legalize SSM, which impacts the strategy of legalization used in this study for a couple reasons explained below. This impacts the study, because as a result the direct legalization of SSM happens for a large number of states at once. Due to the limitations of difference in difference needing years where never treated states exist, this limits the total impact that can be seen. The first approach is using the legalization of SSM as the only policy change to interact with in a time manner. The difficulty with using just this method is twofold. The first problem is that as a result of states being forced to legalize SSM, 13 states had SSM legalized immediately and one more state having it legalized earlier that year. This means in a basic event study model, if just the impact of the policy is being looked at, all states are treated by 2015. This limits the years that can be used to 2008-2014 and the number of states down to 36. Another problem is that some states decided to immediately make some form of adoption by same-sex households illegal following

the Obergefell decision. The two effects are captured in this analysis through, by creating a hybrid approach. This hybrid strategy, referred to in this paper as the Full Adoption Legalization Strategy (FAL). FAL uses the date where Same-Sex households have full access to all types of adoption and SSM legalization at the same time. This is used to capture the effect of a same-sex household finally having access to being able to adopt in states as a married households with their shared income.

Below are two tables, the first shows the states and timings using the SSM:

Table 1: Year of Treatment by SSM

2004	Massachusetts
2008	Connecticut
2009	Iowa, Vermont
2010	New Hampshire, District of Columbia
2011	New York
2012	Maine, Washington
2013	California*, Delaware, Hawaii, Maryland, Minnesota, New Jersey, New Mexico, Rhode Island
2014	Alaska, Arizona, Colorado, Idaho, Illinois, Indiana, Montana, Nevada, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Utah, Virginia, West Virginia, Wisconsin, Wyoming
2015	Alabama, Arkansas, Florida, Georgia, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Tennessee, Texas

The next table shows the breakdown of the timings of states based on the FAL:

Table 2: Year of Treatment by FAL

2004	Massachusetts
2008	Connecticut
2009	Iowa, Vermont
2010	New Hampshire, District of Columbia
2011	New York
2012	Maine, Washington
2013	California*, Delaware, Hawaii, Maryland, Minnesota, New Jersey, New Mexico, Rhode Island
2014	Alaska, Arizona, Colorado, Idaho, Illinois, Montana, Nevada, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Utah, Virginia, West Virginia, Wisconsin, Wyoming
2015	Alabama, Georgia, Kansas, Kentucky, Louisiana, Michigan, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Tennessee, Texas
2016	Mississippi
2017	Arkansas, Florida, Indiana

[1]

After this, the paper moves to models at the individual level. This model uses the repeated cross sectional data of the individuals through all of the years. This model is a triple difference model with staggered timing and is used as the main equation set of interest. The methodology used to solve equation 1 is the standard triple difference event study approach, due to long computational speed and difficulty with converging using the new difference in difference methods used for the other models in this paper. This implies the tails are biased in this model. Equation 2 is a triple difference model using the imputation approach developed by Borusyak, Jaravel, and Spiess. When using this imputation approach only non-categorical variables are reported for significance. If testing pre-trends in equation 1 fails, it is retested in equation 2 to see if the problem with pre-trends is related to the problems with the standard difference in difference. This model is used to compare the

[1]* California is the only state in the union that technically legalized same-sex marriage in June 2008, and then removed that decision by a constitutional amendment in November 2008. Since it is not possible to know whether marriage licenses were considered legitimate for same-sex households and how much discrimination occurred when making adoption decisions at that time, this analysis does two things. The first specification this paper makes is that California is treated when it legalizes again in 2013 and is considered untreated before this time. This is mainly because the time that California is treated is so small. This paper also runs models with and without California as robustness checks to see if the results change based on these results.

different groups that may be affected by SSM legalization, using opposite-sex households as a baseline, as SSM should not impact these households. The first difference is the type of household. The second difference is before compared to after the FAL or SSM strategy occurred in a given state. The third difference being states that have access to FAL or SSM compared to states that have not yet had access to FAL or SSM. These are equations 1 and 2 as follows:

$$Adopt_{i,s(i),t(i)} = \beta(HHType_i * Legal_{st}) + \lambda_1(HHType_i * \delta_s) + \lambda_2(HHType_i * \delta_t) + \delta_{st} + \Gamma X_{ist} + \varepsilon_{ist} \quad (1)$$

$$Adopt_{i,s(i),t(i)} = \sum_{k=-6}^{K} \beta_k(1)\{t - t^*(s) = k\}(HHType_i * Legal_{st}) + \lambda_1(HHType_i * \delta_s) + \lambda_2(HHType_i * \delta_t) + \delta_{st} + \Gamma X_{ist} + \varepsilon_{ist} \quad (2)$$

For Equation 1, β is the coefficient of interest. The β term explains the change in adoptions for that type of household compared to opposite-sex households, that occurs because of the legalization method used.

For Equation 2, the β_k is the coefficient of interest. This term represents the change in adoptions for that type of household compared to opposite-sex households, that occurs because of the legalization method used at time k years from the current time t. The term t*(s) is the year that the legalization method occurred in that state. K stands for the end of the horizons, which in this model is t+6 periods ahead.

For both equation 1 and 2, since these are individual level analyses, the subscript i is for individual, s is for the state and t is for time or, the year of the data. Adopt is the outcome that stands for whether the individual had an adopted child in the household. ε is the error

term. δ_s is for the state level fixed effects. δ_t is for the time level fixed effects. δ_{st} is for the state by time level fixed effects. Legal is an interaction term between time and treatment group dummy variables for the Legalization strategy used. HHType is a dummy variable that is 1 if that individual is in the type of household used and 0 if they are in a opposite-sex household. This model uses state by time, HHType by time and HHType by state fixed effects. X stands for the control variables, consisting of age, education, race, whether the individual is Hispanic and the number of children.

The next set of models use Equation 3 and 4 and are used to try and view the trend of adoptions within same-sex households to see if they significantly changed within their own groups and to test whether SSM had an impact on opposite-sex households adopting. Both equations use the difference in difference method of imputation developed by Borusyak, Jaravel, and Spiess. The first difference is before compared to after the FAL or SSM strategy occurred in a given state. The second difference being states that have access to FAL or SSM compared to states that have not yet had access to FAL or SSM.

$$Adopt_{i,s(i),t(i)} = \beta(Legal_{st}) + \delta_s + \delta_t + \Gamma X_{ist} + \varepsilon_{ist} \tag{3}$$

$$Adopt_{i,s(i),t(i)} = \sum_{k=-4}^{K} \beta_k(1)\{t - t^*(s) = k\}(Legal_{st}) + \delta_s + \delta_t + \Gamma X_{ist} + \varepsilon_{ist} \tag{4}$$

For Equation 3, β is the coefficient of interest. The β term shows if there exists a change in adoptions for that type of household that occurs because of the legalization method used.

For Equation 4, the β_k is the coefficient of interest. This term represents the change in adoptions for that type of household that occurs because of the legalization method used at time k years from the current time t. The term t*(s) is the year that the legalization method occurred in that state. K stands for the end of the horizons, which in this model is t+4 periods ahead. Some models do not have a large enough sample size to generate all four periods in the future, so K in this case is up to 4 periods forward.

For both equation 3 and 4, since these are individual level analyses, the subscript i is for individual, s is for the state and t is for time or, the year of the data. Adopt is the outcome that stands for whether the individual had an adopted child in the household. ε is the error term. δ_t is for the time level fixed effects. δ_s is for the state level fixed effects. Legal is an interaction term between time and treatment group dummy variables for the legalization strategy used. This model uses state and time fixed effects. X stands for the control variables, consisting of age, education, race, whether the individual is Hispanic and the number of children.

The next model is a triple difference within same-sex households. This model attempts to explore/explain the trends seen in the previous sets of models. This paper uses these models to see if income levels for adoptive families is different from non-adoptive families after the legalization method. This model also uses the methodology developed by Borusyak, Jaravel, and Spiess to solve. The first difference is whether the household adopted. The second difference is before compared to after the FAL or SSM strategy occurred in a given state. The third difference being states that have access to FAL or SSM compared to states that have not yet had access to FAL or SSM. In these models, the dependent variable is the log(income). These are Equations 5 and 6 as follows:

$$log(Income)_{i,s(i),t(i)} = \beta(Adopt_i * Legal_{st}) + \lambda_1(Adopt_i * \delta_s) + \lambda_2(Adopt_i * \delta_t) + \delta_{st} + \Gamma X_{ist} + \varepsilon_{ist} \quad (5)$$

$$log(Income)_{i,s(i),t(i)} = \sum_{k=-4}^{K} \beta_k(1)\{t - t^*(s) = k\}(Adopt_i * Legal_{st}) + \lambda_1(Adopt_i * \delta_s) + \lambda_2(Adopt_i * \delta_t) + \delta_{st} + \Gamma X_{ist} + \varepsilon_{ist} \quad (6)$$

For Equation 5, β is the coefficient of interest. The β term shows if there exists a change in income that is different for a family with an adopted child that occurs because of the legalization method used.

For Equation 6, the β_k is the coefficient of interest. This term represents if there exists a change in income that is different for a family with an adopted child, after the legalization method used at time k years from the current time t. The term t*(s) is the year that the legalization method occurred in that state. K stands for the end of the horizons, which in this model is t+4 periods ahead. Some models do not have a large enough sample size to generate all four periods in the future, so K in this case is up to 4 periods forward.

For both Equation 5 and 6, since these are individual level analyses, the subscript i is for individual, s is for the state and t is for time or, the year of the data. log(Income) is the outcome that stands for the log of the income of that individual. ε is the error term. δ_t is for the time level fixed effects. δ_s is for the state level fixed effects. Legal is an interaction term between time and treatment group dummy variables for the legalization strategy used. Adopt is a dummy variable that is 1 if that individual is in an adoptive household and 0 if they are in a non-adoptive household. This model uses state by time, Adopt by time and Adopt by state fixed effects. X stands for the control variables, consisting of age, education, race, usual hours worked per week, weeks worked last year, whether the individual is Hispanic and the number of children.

The next section aims to specify which group has the impact from the last model. In this next set of models, women in same-sex households are split between adoptive and non-adoptive households. Then, they are tested using a difference in difference model to see how each group's income changed. The methodology used to solve this equation is the imputation approach developed by Borusyak, Jaravel, and Spiess. The first difference is before compared to after the FAL or SSM strategy occurred in a given state. The second difference being states that have access to FAL or SSM compared to states that have not yet had access to FAL or SSM. This set of models uses Equation 7 and 8 as follows:

$$log(Income)_{i,s(i),t(i)} = \beta(Legal_{st}) + \delta_s + \delta_t + \Gamma X_{ist} + \varepsilon_{ist} \tag{7}$$

$$log(Income)_{i,s(i),t(i)} = \sum_{k=-4}^{K} \beta_k(1)\{t - t^*(s) = k\}(Legal_{st}) + \delta_s + \delta_t + \Gamma X_{ist} + \varepsilon_{ist} \tag{8}$$

For Equation 7, β is the coefficient of interest. The β term shows if there exists a change in income due to the occurrence of the legalization method used.

For Equation 8, the β_k is the coefficient of interest. This term represents if there exists a change in income after the legalization method used at time k years from the current time t. The term t*(s) is the year that the legalization method occurred in that state. K stands for the end of the horizons, which in this model is t+4 periods ahead. Some models do not have a large enough sample size to generate all four periods in the future, so K in this case is up to 4 periods forward.

For both equation 7 and 8, since these are individual level analyses, the subscript i is for individual, s is for the state and t is for time or, the year of the data. Adopt is the outcome that stands for whether the individual had an adopted child in the household. ε is the error term. δ_t is for the time level fixed effects. δ_s is for the state level fixed effects. Legal is an interaction term between time and treatment group dummy variables for the legalization strategy used. This model uses state and time fixed effects. X stands for the control variables, consisting of age, education, race, usual hours worked per week, weeks worked last year, whether the individual is Hispanic and the number of children.

The findings from Equations 9 and 10 are then attempted to be explained by using a triple difference to test whether being an adoptive family had a different impact of whether you had private insurance after the legalization method occurred. This model also uses the methodology developed by Borusyak, Jaravel, and Spiess to solve. The first difference is whether the household adopted. The second difference is before compared to after the FAL

or SSM strategy occurred in a given state. The third difference being states that have access to FAL or SSM compared to states that have not yet had access to FAL or SSM. In these models, the dependent variable is the whether the individual had private health insurance. These are Equations 9 and 10 as follows:

$$Insurance_{i,s(i),t(i)} = \beta(Adopt_i * Legal_{st}) + \lambda_1(Adopt_i * \delta_s) + \lambda_2(Adopt_i * \delta_t) + \delta_{st} + \Gamma X_{ist} + \varepsilon_{ist} \quad (9)$$

$$Insurance_{i,s(i),t(i)} = \sum_{k=-4}^{K} \beta_k(1)\{t - t^*(s) = k\}(Adopt_i * Legal_{st}) + \lambda_1(Adopt_i * \delta_s) + \lambda_2(Adopt_i * \delta_t) + \delta_{st} + \Gamma X_{ist} + \varepsilon_{ist} \quad (10)$$

For Equation 9, β is the coefficient of interest. The β term shows if there exists a change in the percentage of individuals with private insurance that is different for households with an adopted child that changed because of the legalization method used.

For Equation 10, the β_k is the coefficient of interest. This term represents if there exists a change in percent of individuals with private insurance after the legalization method used at time k years from the current time t. The term t*(s) is the year that the legalization method occurred in that state. K stands for the end of the horizons, which in this model is t+4 periods ahead. Some models do not have a large enough sample size to generate all four periods in the future, so T in this case is up to 4 periods forward.

Finally, it is tested to see if different levels of household income behaved differently using Equations 1 and 2 once again. This is done by splitting the data into 4 quartiles based on levels of household income to see if the quartiles behaved differently. This is run the same as above, the only difference being that both models were able to be run using the methodology developed by Borusyak, Jaravel, and Spiess to solve. Below are the results of these models

and testing, many robustness checks were put into the Appendix.

4 Data

The Data used in this analysis is from the American Community Survey (ACS). There are two major limitations with using data from the ACS in this analysis and how this paper goes about addresing these problems.

One of these problems is that same-sex households spouses were only identifiable after 2008. This is due to the Defense of Marriage Act of 1996, where the Census Bureau interpreted this as needing to re-code one of the spouses genders. As a result, the data available to this study is only available from 2008-2016. This cuts out Massachusetts in this analysis, as they were first state to legalize gay marriage in 2004.

The second problem is the way that the ACS does not differentiate between types of adopted individuals. Children in the ACS are only identified as adopted, with the method of adoption not specified and only being able to see whether the head of the household is the adoptive parent to the child. The two major methods of adoption exist. Second-parent adoption occurs when one parent is a biological (or previously adoptive) parent of a child and another person adopts the child to become another parent. The other method of adoption is where a single parent or couple decides to adopt a child out of either foster care or privately, usually through a private agency or private individual. As a result of only being able to match to the head of household, it is only possible to identify approximately half of the second-parent adopted children, but can identify the entire both parent (or single parent) adopted population. Step/second parent adoption accounts for a quarter of all adopted children, meaning that in our sample, they instead account for approximately 14 percent in our sample. This percentage assumes that the head of household and the spouse are equally likely to be the second/step parent, which may not be true, but it is reasonable to believe that these would be consistent across same-sex and opposite-sex households.

There is a lot of debate in the literature over the usage of the Current Population Survey

(CPS) compared to the ACS. The reason the ACS is used in this paper is twofold. Firstly and most importantly, the matching of adopted children to parents. Prior to 2019, the CPS linked a child based on their relationship to a "Mother" and a "Father" on whether the child is either adopted or biological. This leaves the possibility of a substantial under-count of same-sex households or incorrect coding when it came to adopted children. The ACS makes this substantially easier by using a more detailed code of relation to head of household and including the category of adopted child. The second reason is the larger sample size that the ACS provides as it better represents the United States as a whole. One thing to note is that "A labor of love: The impact of same-sex marriage on labor supply" (**?**) used both CPS and ACS data in their analysis and found that the summary statistics of the data is very similar implying that they both are usable interchangeably, but for their analysis they felt the CPS is better as it allowed them to go back to 2003.

All two parent households are also restricted to households where both parents are between 26 and 64. This is so that individuals still have a connection to the labor market and because some states have a minimum age of adoption at 25 years of age, and since it takes 9-18 months to adopt, the minimum age is set at 26. Below is the breakdown of types of household by number of adoptive and non-adoptive individuals per family.

Below is Table 3 which represents the year by adoptive and non-adoptive families divided by household type.

Table 3: Years by Adoptions by Types of Households

	Year								
Group:	2008	2009	2010	2011	2012	2013	2014	2015	2016
(1)	970294	970394	962524	930652	930208	936440	921614	924698	918794
(1a)	22522	21248	21068	19626	19636	19078	18286	17670	17708
(2)	4616	4778	4896	4866	5052	5624	5994	6550	6448
(2a)	252	292	244	262	318	392	360	424	444
(3)	4506	4702	4792	4818	4920	5914	6100	6580	6776
(3a)	94	88	102	118	148	156	174	184	186
(4)	117425	118516	122195	124120	123016	122269	122680	123034	123340
(4a)	571	522	559	586	573	541	541	553	544
(5)	174241	175796	180310	183051	180792	177088	176341	174273	172327
(5a)	2234	2143	2239	2210	2105	2042	1889	1882	1839

Note: Groups were created based on which household type the individual belonged to and whether they were an adoptive household or not. Group 1 and 1a are opposite-sex individuals, group 2 and 2a are individual women in same-sex households, group 3 and 3a are individual men in same-sex households, group 4 and 4a are single father households, group types 5 and 5a are single mother households. Household groups with an a are households that contain an adopted child, while those without do not have an adoptive child. All households that require multiple partners have an even number of individuals, while one parent households can contain an odd amount of individuals.

We can see from table 3 that total same-sex households are growing. We can also see that adoptive households, as a percentage of that type of household in general seem to actually be falling as a whole in the data.

Since 2019, the CPS and ACS changed to better report same-sex households, so now better statistics exist to classify finding same-sex adopted children. In this data, they found that 20.9% of same-sex couples with children had adopted a child, and that that is the same for 2.9% of opposite-sex couples. In this paper's data it is found that in this data, 17.9% of both men and women in same-sex households had an adopted child out of households with children, and the same is true for 3.34% of opposite-sex households. As a result, the population of adoptive households should be correctly identified.

5 Results

Table 4 below shows the initial results of trying to see whether same-sex households changed their adopting trends due to SSM. This uses Equation 1 and compares different types of households to opposite-sex households using a basic event study approach. Column 1 uses women in same-sex households, column 2 uses men in same-sex households, column 3 uses single mother households, and column 4 uses single father households. In this table, β_k represents the time of the SSM event with β_{+1} meaning the effect a year after the event. The controls being used consist of age, education, race, whether the individual is Hispanic and the number of children, and only the quantitative variables are reported. The dependent variable in these models is a dummy that is 1 if the individual had an adopted child.

Table 4: Event Study Adoption Results for Households using SSM Compared to Opposite-Sex Households

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0200***	-0.00370	-0.000108	-0.000407
	(0.00722)	(0.00394)	(0.000526)	(0.000495)
β_{+1}	-0.00309	0.00504	-0.00122**	-0.000722
	(0.00713)	(0.00527)	(0.000538)	(0.000595)
β_{+2}	-0.00467	0.00357	-0.000709	0.000510
	(0.00764)	(0.00479)	(0.000633)	(0.000677)
β_{+3}	-0.0168***	0.0148*	-0.0000620	0.000571
	(0.00626)	(0.00799)	(0.000986)	(0.000881)
β_{+4}	-0.0312***	0.00566	0.0000593	0.000772
	(0.00891)	(0.00586)	(0.000614)	(0.000686)
β_{+5}	-0.0246	0.0117	0.00106**	0.000465
	(0.0157)	(0.00884)	(0.000483)	(0.000936)
β_{+6}	-0.0361***	-0.00261	-0.000891	-0.00172***
	(0.00823)	(0.0155)	(0.00139)	(0.000551)
N	8601194	8599840	10139896	9632882
Pre-trend Test (P-value)	0.0018***	0.1123	0.8154	0.0241**
adj. R^2	0.020	0.019	0.019	0.020

Standard errors in parentheses

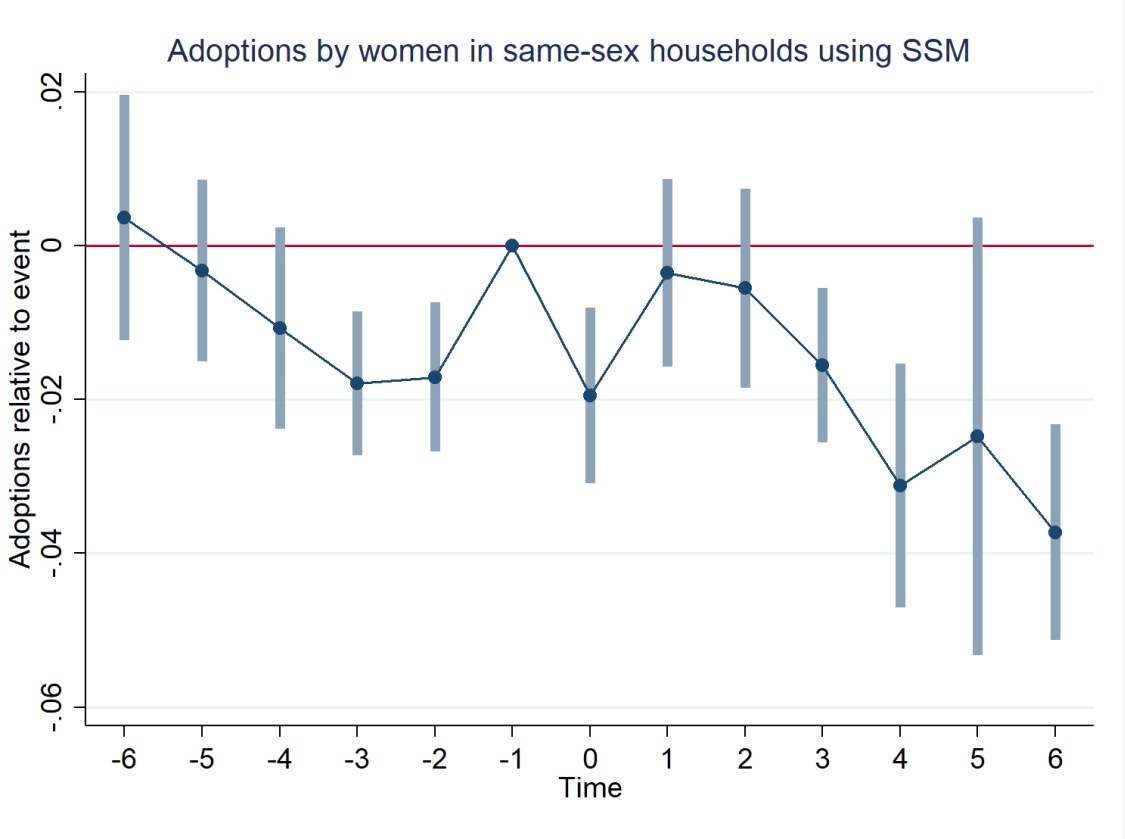
* $p < .10$, ** $p < .05$, *** $p < .01$

Note: All models in Table 4 use Equation 1. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. All models use the SSM. All specifications include, state by year, year by household type, and state by household type fixed effects. Controls in this model are age, education, race, whether the individual is Hispanic and the number of children. The sample contains couples (or individuals in the case of single parents) where both partners are between 26-64 years old. A joint pre-trends test's p-value is also reported for each model. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is included in all models.

β_k in these models show whether there exists an effect in the household type of interest that differs from opposite-sex households k years after the legalization method of SSM. The pre-trend test is a joint F-test conducted on the pre-periods. In this model, T-1 is removed due to colinearity for the model to be run. It can be seen from the results that the only

household type with impact that is related to the legislation, is the women in same-sex households. Unfortunately, even though this result points to a downward trend of women in same-sex households adopting, the pre-trends test fails. The accompanying graph for model 1 is displayed below:

Figure 1:



We can see from these results, that it seems the group of women in same-sex households are on a long-term downward trend, that may be different from opposite-sex households.

After this, Equation 1 is run, using the FAL. Controls and columns represent the same groups in Table 5 as in Table 4.

Table 5: Event Study Adoption Results for Households using FAL Compared to Opposite-Sex Households

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0208**	-0.00437	-0.000113	-0.000454
	(0.00777)	(0.00435)	(0.000519)	(0.000542)
β_{+1}	-0.00730	0.00308	-0.00122**	-0.000785
	(0.00737)	(0.00561)	(0.000540)	(0.000614)
β_{+2}	-0.00528	0.00204	-0.000813	0.000521
	(0.00797)	(0.00539)	(0.000607)	(0.000684)
β_{+3}	-0.0184**	0.0126	-0.0000914	0.000629
	(0.00693)	(0.00843)	(0.000975)	(0.000871)
β_{+4}	-0.0326***	0.00372	0.00000980	0.000843
	(0.00899)	(0.00656)	(0.000633)	(0.000716)
β_{+5}	-0.0263	0.00945	0.00107**	0.000533
	(0.0158)	(0.0100)	(0.000446)	(0.000993)
β_{+6}	-0.0371***	-0.00424	-0.000935	-0.00166***
	(0.00819)	(0.0155)	(0.00138)	(0.000535)
N	8601194	8599840	10139896	9632882
Pre-trend Test (P-value)	0.0054***	0.5033	0.3022	0.3022
adj. R^2	0.020	0.019	0.019	0.020

Standard errors in parentheses

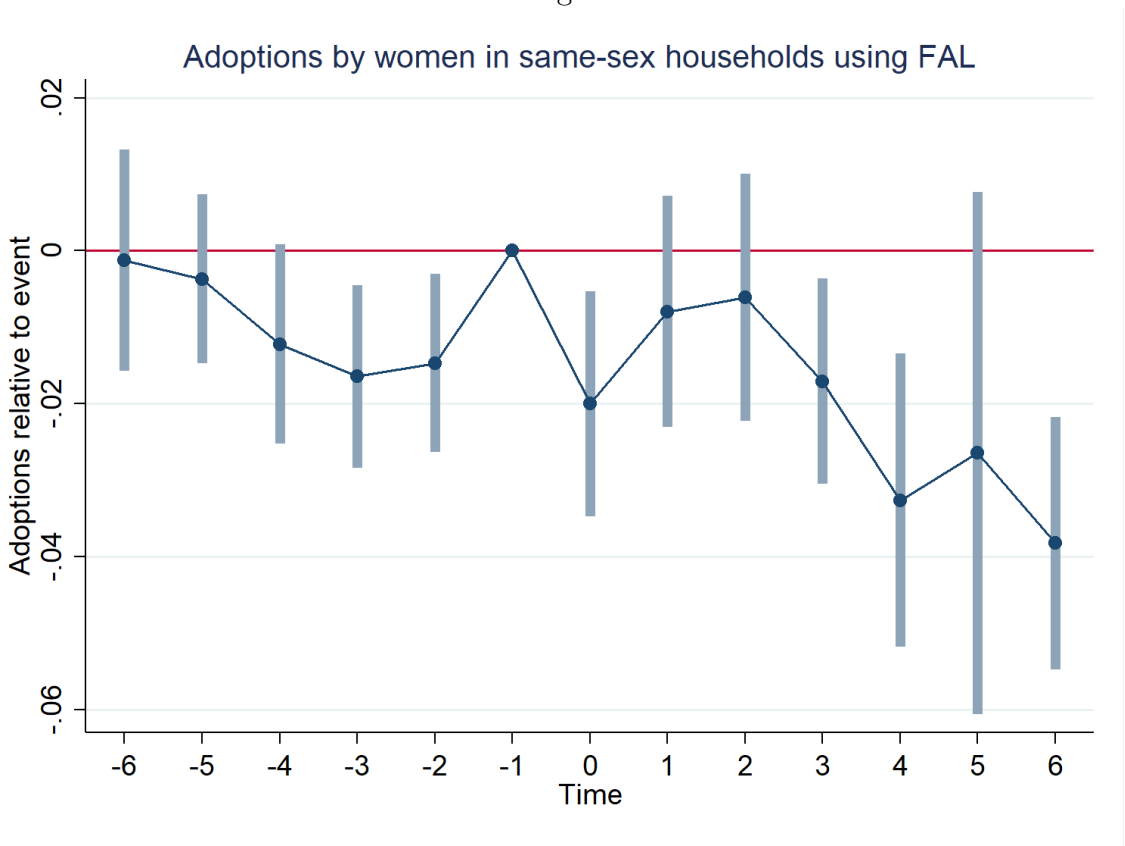
* $p < .10$, ** $p < .05$, *** $p < .01$

Note: All models in Table 5 use Equation 1. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. All models use the FAL. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper. The sample contains couples (or individuals in the case of single parents) where both partners are between 26-64 years old. A joint pre-trends test's p-value is also reported for each model. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is included in all models.

β_k in these models show whether there exists an effect in the household type of interest that differs from opposite-sex households k years after the legalization method of FAL. It can be seen that once again the shape/trend of adoptions using both methods are actually incredibly similar. The main differences are that the significance of the variables closer to

the impact timing are less significant for this set of models, likely coming from the fact that FAL is used to control states that restricted adoptions after same-sex legalization, so we expect higher levels of adoptions when using this method compared to SSM. Below is Figure 2 which uses the results for same-sex female households from the table above:

Figure 2:



It can be seen from this that the results for FAL are similar to SSM for adoptions, and that the changed method does not fix the problem with pre-trends.

After this, the ATET is found for the same sample. In this case, if pre-trends failed for the last model, they were re-calculated for this model to see if the issue in pre-trends could be fixed with the imputation method used in all other models. Table 6 uses SSM for all four models. Controls and columns represent the same groups in Table 6 as in Table 4.

Table 6: ATET Adoption Results for Households using SSM Compared to Opposite-Sex Households

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β	-0.0154**	-0.00412	-0.000294	0.000574
	(0.00747)	(0.00348)	(0.000532)	(0.000457)
N	8585401	8584866	9751002	9362631
Pre-trend Test (P-value)	0.0004***	0.0732*		0.2300

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 6 represents Equation 2 for the average treatment effect on the treated. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. If pre-trends failed in Table 4 for the event study, pre-trends were re-run for this model since the method of imputation is more accurate. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is included in all models.

β in these models show the average treatment effect on the treated of whether there exists an effect in the household type of interest that differs from opposite-sex households after the legalization method of SSM. We can see from this table that the only impact of any group is within same-sex female households. This once again shows a downward trend, but fails the pre-trends test at a significant level.

After this, the same models and equation is run using the FAL. The results of this are displayed below in Table 7:

Table 7: ATET Adoption Results for Households using FAL Compared to Opposite-Sex Households

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β	-0.0151***	-0.00283	0.000536	0.000817**
	(0.00515)	(0.00401)	(0.000380)	(0.000353)
N	8598215	8597738	10084182	9598197
Pre-trend Test (P-value)	0.0028***	0.2969		

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 7 represents Equation 2 for the average treatment effect on the treated. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. If pre-trends failed in Table 5 for the event study, pre-trends were re-run for this model since the method of imputation is more accurate. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is included in all models.

β in this model shows the average treatment effect on the treated of whether there exists an effect in the household type of interest that differs from opposite-sex households after the legalization method of FAL. These results once again are very similar to the last section, the difference being that the pre-trends p-values are better for these models. Unfortunately, the pre-trend test's p-value for the model for women in same-sex households is still extremely low. In this model, single fathers actually showed a statistically significant increase, but the coefficient of 0.000817 means the legalization had an increase of 0.08% which is incredibly small.

Due to the issues with pre-trends, it looks as if opposite-sex couples may not be a good control group for adoptions when testing them against women in same-sex households. As a result, a model is tested just comparing opposite-sex and same-sex households within themselves in an attempt to fix pre-trends and make sure that opposite-sex households did

not change due to SSM. Due to smaller sample sizes in these groups, only 4 periods after and prior to legalization are run, with some being dropped by the estimator when the sample sizes are too small.

From this point onward, two tables will be displayed, one after the other. The first table will look at the event study approach, while the second will look at the ATET. The significance of the independent variables and the pre-trends for both these models are the same.

Since pre-trends fails the previous model, the next model, uses equation 3 (Table 8) and equation 4 (Table 9) to look at how opposite-sex couples, and same-sex couples change their adoptions within their own household group, based on the legalization methods. For each model, the sample is cut down to only their own type of households, to see if any significant trends exist strictly within any of these three groups. Table 8 and Table 9 below shows the impact using SSM. Controls are the same as in Table 4.

Table 8: Results for Trends with SSM

	(1)	(2)	(3)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β	0.0000847	-0.0147**	-0.00592*
	(0.000366)	(0.00700)	(0.00336)
N (ATET)	6532524	35656	35074
Pre-trend Test (P-value)	0.3180	0.0054***	0.2023

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 8 represents Equations 3 for the average treatment effect on the treated. California is included in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the SSM strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

Table 9: Results for Trends with SSM

	(1)	(2)	(3)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β_0	-0.0000701	-0.0186***	-0.00976**
	(0.000495)	(0.00719)	(0.00384)
β_{+1}	-0.000296	-0.0134	-0.00698
	(0.000331)	(0.00972)	(0.00477)
β_{+2}	0.000880**	-0.00756	0.00367
	(0.000363)	(0.0113)	(0.00405)
β_{+3}	-0.000350	-0.0261***	0.00967*
	(0.000464)	(0.00901)	(0.00494)
β_{+4}	0.00324***	0.0188	-0.0199***
	(0.00114)	(0.0210)	(0.00473)
N (Event Study)	6520000	35576	35028
Pre-trend Test (P-value)	0.3180	0.0054***	0.2023

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 8 represents 4 with the event study approach. California is included in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the SSM strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

β in Table 8 shows the average treatment effect on the treated of the legalization method. β_k in Table 9 shows whether there exists an effect k years after the legalization method.

This result shows once again that a downward trend for adoption by women in same-sex households exists, with almost the same coefficient for the β as the previous model in Table 6. Unfortunately, this did not fix the problems with pre-trends, for the model of women in same-sex households. It does show that SSM did not have a statistically significant effect on the rate of adoption for opposite-sex households.

Table 10 and Table 11 shows the same information as Table 8 and Table 9 except using FAL.

Table 10: ATET Results for Trends with FAL

	(1)	(2)	(3)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β	-0.000364	-0.0120**	-0.00392
	(0.000300)	(0.00529)	(0.00438)
N (ATET)	8348148	48778	48214
Pre-trend Test (P-value)	0.2023	0.0007***	0.7843

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 9 represents Equations 3 for the average treatment effect on the treated. California is included in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the FAL strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

Table 11: Event Study Results for Trends with FAL

	(1)	(2)	(3)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β_0	-0.000268	-0.0132**	-0.00583
	(0.000394)	(0.00585)	(0.00409)
β_{+1}	0.0000380	-0.00555	-0.00102
	(0.000366)	(0.00729)	(0.00510)
β_{+2}	-0.000800**	-0.00542	-0.00550
	(0.000391)	(0.00736)	(0.00564)
β_{+3}	-0.00127**	-0.0209**	-0.00397
	(0.000527)	(0.00900)	(0.00556)
β_{+4}	-0.000186	-0.0276***	0.005347
	(0.000359)	(0.00629)	(0.00567)
N (Event Study)	8243472	47970	47304
Pre-trend Test (P-value)	0.2023	0.0007***	0.7843

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 9 represents Equations 4 with the event study approach. California is included in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the FAL strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

The results are basically the same for both opposite-sex and women in same-sex households as in the previous table. The only difference is that there is no significance for men in same-sex households in either the event study model at any time period, or the ATET model.

After this, Equation 5 (Table 12) and 6 (Table 13) are used to see why a downward trend seems to be occurring for same-sex female households. To do this, the data is split into just same-sex households and are tested to see if the income of same-sex households changed based on whether or not they were an adoptive family or not after SSM. All models were run testing 4 time periods after and before legalization, but some periods later were dropped

due to small sample sizes. In this model the controls being used consist of age, education, race, whether the individual is Hispanic, weeks worked last year pooled, usual hours worked per week, and the number of children. Table 12 and Table 13 below shows the results of this with and without California.

Table 12: ATET Income Results for Same-Sex Households using SSM

	(1)	(2)	(3)	(4)
	Same-sex Women	Same-Sex Men	Same-Sex Women	Same-Sex Men
	loginc	loginc	loginc	loginc
β	0.260***	0.225**	0.246***	0.277**
	(0.0703)	(0.101)	(0.0796)	(0.119)
N (ATET)	47068	46373	40667	38205
Pre-trend Test (P-value)	0.7865	0.1001	0.9531	0.2461

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 9 represents Equations 5 for the average treatment effect on the treated. Models (1) and (2) include California, and models (3) and (4) do not include California. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

Table 13: Event Study Income Results for Same-Sex Households using SSM

	(1)	(2)	(3)	(4)
	Same-sex Women	Same-Sex Men	Same-Sex Women	Same-Sex Men
	loginc	loginc	loginc	loginc
β_0	0.173***	0.150	0.157**	0.293**
	(0.0608)	(0.114)	(0.0697)	(0.138)
β_{+1}	0.333***	-0.0267	0.280**	
	(0.114)	(0.131)	(0.133)	
β_{+2}	0.295***		0.302***	
	(0.0636)		(0.0654)	
N (Event Study)	47068	46373	40667	38205
Pre-trend Test (P-value)	0.7865	0.1001	0.9531	0.2461

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Table 9 represents Equations 6 with the event study approach. Models (1) and (2) include California, and models (3) and (4) do not include California. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

β in Table 12 shows the average treatment effect on the treated of whether there exists an average effect in adoptive households that differs from non-adoptive households after the legalization method of SSM. β_k in Table 13 shows whether there exists an effect in adoptive households that differs from non-adoptive households k years after the legalization method of SSM. The dependent variable in this model is the log of the individual's income.

In the event study portion of models 1 and 3 we see that the income for women in same-sex households is statistically significantly higher if they were an adoptive household after legalization than adoptive households before legalization at each time period. This can be seen for same-sex men in model 4 as well, but is only available at the initial time of legalization due to sample size restrictions. Though, when the ATET is calculated for all models the increase in income for men in same-sex adoptive households is 22.5-27.7 percentage points and for women in same-sex adoptive households is 24.6-26 percentage

points. is approximately the same across all models, with models 1 and 3 having significance at the 0.01 p-value and models 2 and 4 having significance at the 0.05 p-value.

Equation 5 and 6 were used again, except with the FAL. All fixed effects and controls were the same as in Tables 12 and 13.

Table 14: ATET Income Results for Same-Sex Households using FAL

	(1)	(2)	(3)	(4)
	Same-sex Women	Same-Sex Men	Same-Sex Women	Same-Sex Men
	loginc	loginc	loginc	loginc
β	0.258***	-0.238***	0.250***	-0.187**
	(0.0577)	(0.0796)	(0.0580)	(0.0880)
N (ATET)	47762	46679	41241	38448
Pre-trend Test (P-value)	0.8489	0.0810*	0.9069	0.1865

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Models (1) and (2) include California, and models (3) and (4) do not include California. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

Table 15: Event Study Income Results for Same-Sex Households using FAL

	(1)	(2)	(3)	(4)
	Same-sex Women	Same-Sex Men	Same-Sex Women	Same-Sex Men
	loginc	loginc	loginc	loginc
β_0	0.265***	-0.0347	0.281***	0.0131
	(0.0541)	(0.0995)	(0.0525)	(0.115)
β_{+1}	0.236***	-0.251**	0.207***	-0.426***
	(0.0749)	(0.120)	(0.0778)	(0.140)
β_{+2}	0.214***	-0.311***	0.146*	-0.122
	(0.0789)	(0.0946)	(0.0871)	(0.101)
β_{+3}	0.288***	-0.293***	0.426***	
	(0.0807)	(0.0867)	(0.0918)	
β_{+4}	0.342***		0.347***	
	(0.0744)		(0.0730)	
N (Event Study)	47734	46661	41213	38430
Pre-trend Test (P-value)	0.8489	0.0810*	0.9069	0.1865

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Models (1) and (2) include California, and models (3) and (4) do not include California. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

Tables 14 and 15 give an interesting result. For women in same-sex households, the result is approximately the same as in Table 10, where both with and without California, adoptive households experience a 25-25.8 percentage point increase in their income following the legalization when compared to non-adoptive women in same-sex households. Men in same-sex adoptive households on the other hand experience a decrease in income of 18.7-23.8 percentage points after FAL compared to non-adoptive families, which is the opposite of what Table 10 showed. These conflicting results likely show that men in same-sex households in the states that were forced to legalize due to the Obergefell decision, make decisions differently from the states that were not forced to legalize. This is also evidenced by a lower level of significance in the pre-trends value.

The results for Tables 12-15, show that same-sex women in adoptive households have higher levels of income after the legalization. This could be the reason as to why they seem to be experiencing a downward trend of adoptions amongst the group as a whole. The next test is done only on same-sex women in adoptive households because of larger p-values for the pre-trends test and the consistent results across strategies.

After this testing is conducted on women in same-sex households, and the group is separated once again. Now women in adoptive same-sex households are tested amongst themselves, while women in non-adoptive same-sex households are separately tested. This is done to see a couple of different possibilities. This paper wants to see whether both groups have an effect from the legislation, and whether the effects, if significant, are in the same direction. This is tested for both FAL and SSM for robustness. The results listed below using Equation 7 (Table 16) and Equation 8 (Table 17).

Table 16: ATET Adoption Separated Income Results for Women in Same-Sex Households

	(1)	(2)	(3)	(4)
	Non-Adoptive FAL	Adoptive FAL	Non-Adoptive SSM	Adoptive SSM
	loginc	loginc	loginc	loginc
β	0.00874	0.280***	-0.000964	0.252***
	(0.0142)	(0.0494)	(0.0156)	(0.0590)
N (ATET)	42722	2449	31358	1755
Pre-trend Test (P-value)	0.5316	0.7370	0.6469	0.4227

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: California is included in all models. Models (1) and (2) use FAL, and models (3) and (4) use SSM. Models (1) and (3) are comprised of same-sex women in non-adoptive households, and models (2) and (4) are comprised of same-sex women in adoptive households. All specifications include controls, state, and time fixed effects as described previously in the paper.

Table 17: Event Study Adoption Separated Income Results for Women in Same-Sex Households

	(1)	(2)	(3)	(4)
	Non-Adoptive FAL	Adoptive FAL	Non-Adoptive SSM	Adoptive SSM
	loginc	loginc	loginc	loginc
β_0	-0.00739	0.242***	-0.00376	0.146***
	(0.0170)	(0.0520)	(0.0177)	(0.0539)
β_{+1}	-0.0168	0.244***	-0.0329	0.326***
	(0.0191)	(0.0686)	(0.0228)	(0.118)
β_{+2}	0.0157	0.259***	0.0343*	0.285***
	(0.0184)	(0.0747)	(0.0199)	(0.0558)
β_{+3}	0.0649***	0.332***	0.0843***	
	(0.0208)	(0.0721)	(0.0207)	
β_{+4}	0.00394	0.408***	-0.0483	
	(0.0164)	(0.0539)	(0.0495)	
N (Event Study)	41995	2421	31286	1755
Pre-trend Test (P-value)	0.5316	0.7370	0.6469	0.4227

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: California is included in all models. Models (1) and (2) use FAL, and models (3) and (4) use SSM. Models (1) and (3) are comprised of same-sex women in non-adoptive households, and models (2) and (4) are comprised of same-sex women in adoptive households. All specifications include controls, state, and time fixed effects as described previously in the paper.

β in Table 16 shows the average treatment effect on the treated of the legalization method. β_k in Table 17 shows whether there exists an effect k years after the legalization method. The dependent variable in this model is the log of the individual's income.

It can be seen here from the β, that the average income for same-sex women in non-adoptive households is not statistically significantly different compared to before legalization. Instead, same-sex women in adoptive families actually were the group that had a higher average income after legislation showing a 25.2-28 percentage point increase in average income. This result indicates that income increases for same-sex women due to the legalization of same-sex marriage is primarily led by families with an adopted child.

Now, this paper attempts to look at why income is different for same-sex women in adoptive households. The hypothesis tested here is related to insurance uptake for the partners of those same-sex individuals. The theory is that when SSM or FAL occurred, women in same-sex adoptive households qualified for their partner's insurance benefits, and therefore were able to obtain in-vitro fertilization treatments under insurance coverage. This would allow same-sex couples with lower levels of income who only had the option to adopt, to instead now be able to have the choice between adoption and in-vitro fertilization. This could explain the increase in income shown by same-sex women in adoptive households.

This is first tested below using Equation 9 (Table 18) and Equation 10 (Table 19). This model uses private insurance, since public insurance generally has language designed to keep same-sex couples from using these benefits such as needing to display some reason of infertility to qualify for coverage. In this model the controls being used consist of age, education, race, whether the individual is Hispanic, weeks worked last year pooled, usual hours worked per week, and the number of children. Below are Tables 18 and 19:

Table 18: ATET Results For Private Insurance Uptake

	(1)	(2)	(3)	(4)
	Same-sex Women FAL	Same-Sex Men FAL	Same-Sex Women SSM	Same-Sex Men SSM
	hcovpriv	hcovpriv	hcovpriv	hcovpriv
β	0.0000659	0.0209	-0.0183	-0.0475
	(0.0266)	(0.0402)	(0.0365)	(0.0367)
N (ATET)	50392	49228	49649	48890
Pre-trend Test (P-value)	0.2661	0.1049	0.4694	0.4329

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: California is included in all models. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. Models (1) and (2) use FAL, and models (3) and (4) use SSM. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

Table 19: Event Study Results For Private Insurance Uptake

	(1)	(2)	(3)	(4)
	Same-sex Women FAL	Same-Sex Men FAL	Same-Sex Women SSM	Same-Sex Men SSM
	hcovpriv	hcovpriv	hcovpriv	hcovpriv
β_0	0.0268	0.0415	0.0198	-0.0304
	(0.0268)	(0.0325)	(0.0343)	(0.0299)
β_{+1}	0.00670	0.00588	-0.0408	-0.151***
	(0.0373)	(0.0570)	(0.0616)	(0.0450)
β_{+2}	0.0109	0.0575	-0.0279	
	(0.0302)	(0.0607)	(0.0364)	
β_{+3}	-0.0485	-0.0604		
	(0.0419)	(0.0687)		
β_{+4}	-0.0936***			
	(0.0262)			
N (Event Study)	50364	49210	49649	48890
Pre-trend Test (P-value)	0.2661	0.1049	0.4694	0.4329

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: California is included in all models. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. Models (1) and (2) use FAL, and models (3) and (4) use SSM. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

β in Table 18 shows the average treatment effect on the treated of whether there exists an average effect in adoptive households that differs from non-adoptive households after the legalization method of SSM. β_k in Table 19 shows whether there exists an effect in adoptive households that differs from non-adoptive households k years after the legalization method of SSM. The dependent variable in this model is a dummy that is 1 if the individual had access to private insurance.

These models show no real significance for any group of the average treatment effect on the treated. This means that there does not exist a difference in the uptake of private insurance on whether you are an adoptive family after the legislation compared to before.

Model (4) shows some significance at time β_{+1} for individual men in same-sex households, but that model can only go to that time at the highest, and has no significance in Table 19 for the ATET.

Even though same-sex couples seemed to not have greater amounts of uptake of private insurance, this paper can still test to see whether lower income levels of same-sex households are the ones that had lower levels of adoptions. This could indicate that lower income levels now had access to alternatives to adoption and used those alternatives. This model tests to see which income levels experienced an impact. Equation 1 and 2 are retested, after splitting the data into 4 quartiles and testing how each quartile's impact on adoption changed due to legalization across households. The results for women in same-sex households is below in Table 20 (Equation 1) and Table 21 (Equation 2):

Table 20: ATET Results Sectioned by Household Income using SSM

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	-0.0174*	-0.0148	-0.00868	-0.0227
	(0.00986)	(0.0139)	(0.0141)	(0.0174)
N (ATET)	2147198	2148964	2144481	2144748
Pre-trend Test (P-value)	0.0927*	0.0005***	0.5877	0.0418**

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex female households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 21: Event Study Results Sectioned by Household Income using SSM

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0127	-0.0121	-0.0211	-0.0264
	(0.0106)	(0.0146)	(0.0139)	(0.0180)
β_{+1}	-0.0321***	-0.0331**	0.0167	-0.0162
	(0.0121)	(0.0161)	(0.0323)	(0.0224)
β_{+2}	-0.0206**	0.0293**	-0.0134	-0.0323*
	(0.00971)	(0.0140)	(0.0224)	(0.0174)
β_{+3}	-0.00535	-0.0445***	0.0214	-0.0511**
	(0.0113)	(0.0166)	(0.0133)	(0.0213)
N (Event Study)	2147198	2148964	2144481	2144748
Pre-trend Test (P-value)	0.0927*	0.0005***	0.5877	0.0418**

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: California is included in all models. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use women in same-sex households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 20 and 21 shows a result that gives some evidence to the idea that through SSM, low income low income same-sex households were the ones who adopted children less after the legalization. This is shown because the first result shows that the lowest income quartile had a decrease in adoptions after legalization and is the only group with a significant β at the 0.1 p-value. This shows that same-sex households decreased the rate they adopted by 1.74 percentage points. The second and fourth quartile also had some significant periods, but is not significant for the β and both had problems with pre-trends.

Next, this is also completed for men in same-sex households to see which quartile contained their largest impact. The results for men in same-sex households is below in Table 22 and Table 23:

Table 22: ATET Results Sectioned by Household Income using SSM

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	0.00372	-0.0284***	-0.00626	0.00212
	(0.00583)	(0.00883)	(0.00835)	(0.00803)
N (ATET)	2179518	2142999	2130788	2131495
Pre-trend Test (P-value)	0.0063***	0.0201**	0.9757	0.0012***

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models uses men in same-sex households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 23: Event Study Results Sectioned by Household Income using SSM

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	0.00166	-0.0208**	-0.0155**	-0.00153
	(0.00659)	(0.00934)	(0.00751)	(0.00860)
β_{+1}	0.0145*	-0.0316***	-0.00187	-0.00851
	(0.00782)	(0.00988)	(0.0116)	(0.00951)
β_{+2}	-0.00721	-0.0437***	0.0192**	0.0101
	(0.00730)	(0.00668)	(0.00868)	(0.0109)
β_{+3}	-0.00237	-0.0632***	-0.00423	0.0389***
	(0.00688)	(0.0103)	(0.0113)	(0.0111)
β_{+4}				-0.0136
				(0.0115)
N (Event Study)	2179518	2142999	2130788	2131495
Pre-trend Test (P-value)	0.0063***	0.0201**	0.9757	0.0012***

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex male households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

It can be seen from Tables 22 and 23, that only the second quartile had an impact on the β, but a low level of significance from the joint pre-trends test. Some other time periods had some significance, but only quartile 2 had consistent significance.

6 Conclusions

This paper attempts to find the impact of same-sex marriage (SSM) legalization on adoptive same-sex households and whether legalization caused an impact to individuals in same-sex household's decision to adopt. Using ACS data, spouses were linked and adoptive and non-

adoptive households became identified. Then, two strategies were created, one that is based solely on SSM legalization, and one based upon full access to adoption legalization (FAL). FAL is created to account for states that restricted same-sex adoption in some form due to SSM. Both of these methods were used to see how these groups of legislation affected adoptive same-sex households.

This paper conducts this by using data from the American Community Survey (ACS) portion of Integrated Public Use Microdata Series, an organization that has been creating samples of data that represent the United States households for years. Through this data, spouses are linked for all types of households, same-sex or opposite sex. After this the type of household is identified, whether that be same-sex, single parent, or opposite sex. Then the different legalization methods are linked based on when each state legalized SSM.

From this point, the first thing tested in this paper is whether each legalization method impacted same-sex or single parent household's decision to adopt. This first set of models was a triple difference used opposite-sex households as a baseline to remove any trends that may be affecting the entire adoption industry. These models showed a significant downward trend only in the model for women in same-sex households, but significance in pre-trends testing was an issue with these models. As a result, this paper decided to look at the trends within each two-person household group to see if legalization effected same-sex households within themselves and to make sure heterosexual household's decision to adopt was not influenced by legalization. The results for these models were similar to the last model, where a downward trend again is significant for women in same-sex households, but pre-trends are a significant issue. For opposite-sex households, there is no statistical evidence that legalization effected their decision to adopt.

After this, with the continual trend of women in same-sex households seaming to adopt less, this paper moves to attempt to investigate why that may be and how legalization may have effected these households separately to non-adoptive households. First, this paper decides to cut the sample down to same-sex households and test whether being an adoptive

household caused your income to change after legalization. This model compares adoptive same-sex households to non-adoptive same-sex households. For SSM, this paper finds that income for women in adoptive same-sex households grew by 24.6-26 percentage points and 25.2-25.8 percentage points using FAL. Men in adoptive same-sex households grew by 22.5-27.7 percentage points using SSM, but actually fell by 18.7-23.8 when using FAL. This points to men in same-sex households possibly acting differently in states where the Obergefell Supreme Court decision was enacted.

Since the results for men are inconsistent, the next model is performed only on women in same-sex households. This model is a simple difference in difference of just either women in adoptive same-sex households and of women in non-adoptive same-sex households. This is to see whether both household types changed their income due to legalization, possibly in different directions, exacerbating the impact across each. When divided, women in adoptive same-sex households had 25.2-28 percentage points higher income than before legalization, while women in non-adoptive same-sex households did not change their income at a statistically significant level. This points to the possibility that the composition of women in same-sex adoptive households has changed due to legalization.

The possibility this paper begins to explore is related to in-vitro fertilization. The theory is that women in same-sex households had two easy options for obtaining children, the first of which being adoption and the second of which being in-vitro fertilization. This paper believes that the trend of women in same-sex households decreasing the rate they adopt is because more women in same-sex households are able to take their partner's insurance and can therefore obtain coverage for in-vitro fertilization. The first test for this is to see if adoptive same-sex couples were more likely than non-adoptive same-sex couples to have private insurance after legalization. This is because many public insurances have language written excluding same-sex households for non-fertility related issues. When tested, no results were significant for private insurance uptake being different across adoptive and non-adoptive families after legislation.

The next test involves repeating the original adoptive household model, to see if same-sex households adopt differently from opposite-sex households after legalization, except breaking it down into quartiles of household income. These models result in some evidence that this could be the case, since there is significance for the lowest quartile of women in same-sex households showing that they decreased the rate they adopt by 1.7 percentage points after SSM legalization. Men in same-sex households also decreased the amount they adopted in the second quartile, but pre-trends were more significant in this model.

These findings are in line with current research, showing that same-sex couples made significant gains in relation to SSM legalization. This paper also shows that one of the main drivers of same-sex couples changing their household habits and composition is related to whether or not the household has, or wants to adopt a child. Finally, this paper generally, puts up some evidence that in-vitro fertilization could negatively impact women in same-sex marriage's decision to adopt. The next steps from here would be to see the impact of in-vitro fertilization procedures or number of facilities per state changes after legalization.

References

A Appendix

The models listed are all models run for robustness. Most models are just the same models from the paper with California removed.

Table 24: Event Study Adoption Results for Households using SSM Compared to Opposite-Sex Households Without California

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0211**	-0.00593	-0.000373	-0.000524
	(0.00845)	(0.00407)	(0.000523)	(0.000544)
β_{+1}	0.00254	0.00233	-0.00149**	-0.00110*
	(0.00613)	(0.00590)	(0.000607)	(0.000598)
β_{+2}	-0.00211	0.00389	-0.00116*	-0.0000149
	(0.00898)	(0.00555)	(0.000660)	(0.000601)
β_{+3}	-0.0158**	0.0187*	-0.0000766	0.0000395
	(0.00720)	(0.0106)	(0.00135)	(0.00106)
β_{+4}	-0.0297***	0.00455	-0.000181	0.000499
	(0.00908)	(0.00613)	(0.000629)	(0.000625)
β_{+5}	-0.0231	0.0108	0.000785*	0.000105
	(0.0154)	(0.00935)	(0.000454)	(0.000920)
β_{+6}	-0.0340***	-0.00335	-0.001000	-0.00180***
	(0.00817)	(0.0152)	(0.00151)	(0.000600)
N	7648281	7645091	9026378	8572887
Pre-trend Test (P-value)	0.0214**	0.3306	0.8083	0.0256**
adj. R^2	0.020	0.020	0.020	0.021

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 4. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. All models use the SSM. All specifications include, state by year, year by household type, and state by household type fixed effects. Controls in this model are age, education, race, whether the individual is Hispanic and the number of children. The sample contains couples (or individuals in the case of single parents) where both partners are between 26-64 years old. A joint pre-trends test's p-value is also reported for each model. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is removed from all models.

Table 25: Event Study Adoption Results for Households using FAL Compared to Opposite-Sex Households Without California

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0225**	-0.00606	-0.000366	-0.000584
	(0.00906)	(0.00477)	(0.000532)	(0.000601)
β_{+1}	-0.00211	0.000514	-0.00144**	-0.00116*
	(0.00665)	(0.00611)	(0.000614)	(0.000612)
β_{+2}	-0.00314	0.00275	-0.00122*	0.0000237
	(0.00938)	(0.00611)	(0.000633)	(0.000623)
β_{+3}	-0.0178**	0.0169	-0.0000867	0.000107
	(0.00808)	(0.0110)	(0.00136)	(0.00107)
β_{+4}	-0.0315***	0.00272	-0.000179	0.000586
	(0.00905)	(0.00683)	(0.000654)	(0.000653)
β_{+5}	-0.0252	0.00868	0.000853*	0.000205
	(0.0154)	(0.0104)	(0.000427)	(0.000973)
β_{+6}	-0.0355***	-0.00481	-0.00103	-0.00177***
	(0.00801)	(0.0151)	(0.00146)	(0.000559)
N	7648281	7645091	9026378	8572887
Pre-trend Test (P-value)	0.0198**	0.7288	0.3398	0.0329**
adj. R^2	0.020	0.020	0.020	0.021

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 5. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. All models use the FAL. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper. The sample contains couples (or individuals in the case of single parents) where both partners are between 26-64 years old. A joint pre-trends test's p-value is also reported for each model. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is removed in all models.

Table 26: ATET Adoption Results for Households using SSM Compared to Opposite-Sex Households Without California

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β	-0.0138*	-0.00564	-0.000676	0.000425
	(0.00770)	(0.00357)	(0.000561)	(0.000520)
N	7702480	7700634	8753944	8405845
Pre-trend Test (P-value)	0.0032***	0.3091		0.2334

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 6. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. If pre-trends failed in Table 4 for the event study, pre-trends were re-run for this model since the method of imputation is more accurate. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is included in all models.

Table 27: ATET Adoption Results for Households using FAL Compared to Opposite-Sex Households Without California

	(1)	(2)	(3)	(4)
	Same-Sex Women	Same-Sex Men	Single Mothers	Single Fathers
	Adopt	Adopt	Adopt	Adopt
β	-0.0143***	-0.00262	0.000302	0.000613
	(0.00541)	(0.00405)	(0.000391)	(0.000385)
N	7713726	7711312	9054150	8618985
Pre-trend Test (P-value)	0.0166**			0.1610

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 7. All models show a comparison between individuals in opposite-sex households and another identified group of interest labeled above. If pre-trends failed in Table 5 for the event study, pre-trends were re-run for this model since the method of imputation is more accurate. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper. Model (1) uses individual women in same-sex households, model (2) uses are individual men in same-sex households, model (3) uses single mother households, model (4) uses single father households. California is included in all models.

Table 28: ATET Results for Trends with SSM without California

	(1)	(2)	(3)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β	0.000251	-0.0125	-0.00754**
	(0.000409)	(0.00764)	(0.00343)
N	5777646	30310	28464
Pre-trend Test (P-value)	0.5082	0.0450**	0.7562

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 3) and specifications as Table 8. California is removed in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the FAL strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

Table 29: Event Study Results for Trends with SSM without California

	(1)	(3)	(5)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β_0	0.0000935	-0.0222**	-0.0115***
	(0.000567)	(0.00891)	(0.00409)
β_{+1}	-0.000184	0.00474	-0.0127*
	(0.000376)	(0.00916)	(0.00659)
β_{+2}	0.000819**	-0.00762	0.00365
	(0.000372)	(0.0114)	(0.00417)
β_{+3}	-0.000419	-0.0253***	0.00784
	(0.000471)	(0.00921)	(0.00488)
β_{+4}	0.00315***	0.0183	-0.0209***
	(0.00115)	(0.0212)	(0.00503)
N	5765122	30230	28418
Pre-trend Test (P-value)			

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 4) and specifications as Table 9. California is removed in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the FAL strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

Table 30: ATET Results for Trends with FAL without California

	(2)	(4)	(6)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β	-0.000263	-0.0114**	-0.00392
	(0.000324)	(0.00573)	(0.00448)
N	7377856	41554	39140
Pre-trend Test (P-value)	0.2582	0.0023***	0.8274

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 3) and specifications as Table 10. California is removed in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the FAL strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

Table 31: Event Study Results for Trends with FAL without California

	(1)	(3)	(5)
	Opposite-Sex	Same-Sex Women	Same-Sex Men
	Adopt	Adopt	Adopt
β_0	-0.000191	-0.0145**	-0.00617
	(0.000430)	(0.00691)	(0.00444)
β_{+1}	0.000110	-0.000424	-0.00209
	(0.000405)	(0.00730)	(0.00562)
β_{+2}	-0.000673	-0.00794	-0.00632
	(0.000462)	(0.00978)	(0.00553)
β_{+3}	-0.00137**	-0.0201**	0.00172
	(0.000590)	(0.00818)	(0.00675)
β_{+4}	-0.000234	-0.0274***	0.00499
	(0.000363)	(0.00642)	(0.00547)
N	7273180	40746	38230
Pre-trend Test (P-value)	0.2582	0.0023***	0.8274

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 4) and specifications as Table 11. California is removed in all models. Model (1) comprises of individuals in opposite-sex households, model (2) comprises of individual women in same-sex households and model (3) comprises of individual men in same-sex households. All models in this table use the FAL strategy. All specifications include controls, and both state and year fixed effects as described previously in the paper.

Table 32: ATET Adoption Separated Income Results for Women in Same-Sex Households Without California

	(1)	(2)	(3)	(4)
	Non-Adoptive FAL	Adoptive FAL	Non-Adoptive SSM	Adoptive SSM
	loginc	loginc	loginc	loginc
β	0.0176	0.269***	0.0148	0.258***
	(0.0144)	(0.0551)	(0.0160)	(0.0706)
N	37291	2040	27285	1452
Pre-trend Test (P-value)	0.6591	0.8823	0.8286	0.7367

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 7) and specifications as Table 16. Models (1) and (2) use FAL, and models (3) and (4) use SSM. California is removed in all models. Models (1) and (3) are comprised of same-sex women in non-adoptive households, and models (2) and (4) are comprised of same-sex women in adoptive households. All specifications include controls, state, and time fixed effects as described previously in the paper.

Table 33: Event Study Adoption Separated Income Results for Women in Same-Sex Households Without California

	(1)	(2)	(3)	(4)
	Non-Adoptive FAL	Adoptive FAL	Non-Adoptive SSM	Adoptive SSM
	loginc	loginc	loginc	loginc
β_0	-0.00608	0.242***	0.000398	0.119*
	(0.0184)	(0.0584)	(0.0194)	(0.0661)
β_{+1}	-0.00422	0.213***	0.00335	0.325**
	(0.0194)	(0.0774)	(0.0248)	(0.145)
β_{+2}	0.0532***	0.213**	0.0453**	0.305***
	(0.0186)	(0.0833)	(0.0185)	(0.0575)
β_{+3}	0.0474*	0.443***	0.0870***	
	(0.0272)	(0.0757)	(0.0195)	
β_{+4}	0.00486	0.380***	-0.0365	
	(0.0155)	(0.0604)	(0.0533)	
N	36551	2012	27212	1452
Pre-trend Test (P-value)	0.6591	0.8823	0.8286	0.7367

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 8) and specifications as Table 17. Models (1) and (2) use FAL, and models (3) and (4) use SSM. California is removed in all models. Models (1) and (3) are comprised of same-sex women in non-adoptive households, and models (2) and (4) are comprised of same-sex women in adoptive households. All specifications include controls, state, and time fixed effects as described previously in the paper.

Table 34: Event Study Results For Private Insurance Uptake Without California

	(1)	(2)	(3)	(4)
	Same-Sex Women FAL	Same-Sex Men FAL	Same-Sex Women SSM	Same-Sex Men SSM
	hcovpriv	hcovpriv	hcovpriv	hcovpriv
β	-0.00739	0.0639	-0.0166	0.00218
	(0.0273)	(0.0447)	(0.0375)	(0.0396)
N	44266	41156	43636	40886
Pre-trend Test (P-value)	0.1705	0.5429	0.4013	0.8488

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 9) and specifications as Table 18. California is removed in all models. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. Models (1) and (2) use FAL, and models (3) and (4) use SSM. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

Table 35: Event Study Results For Private Insurance Uptake With California

	(1)	(2)	(3)	(4)
	Same-Sex Women FAL	Same-Sex Men FAL	Same-Sex Women SSM	Same-Sex Men SSM
	hcovpriv	hcovpriv	hcovpriv	hcovpriv
β_0	0.0384	0.0458	0.0384	-0.0524
	(0.0260)	(0.0395)	(0.0324)	(0.0386)
β_{+1}	0.00231	0.0828	-0.0501	
	(0.0377)	(0.0788)	(0.0704)	
β_{+2}	-0.0127	0.0573	-0.0236	
	(0.0365)	(0.0580)	(0.0363)	
β_{+3}	-0.0793			
	(0.0491)			
β_{+4}	-0.0879***			
	(0.0261)			
N	44238	41138	43636	40886
Pre-trend Test (P-value)	0.1705	0.5429	0.4013	0.8488

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 10) and specifications as Table 19. California is removed in all models. Models (1) and (3) comprises of individual women in same-sex households, and models (2) and (4) comprises of individual men in same-sex households. Models (1) and (2) use FAL, and models (3) and (4) use SSM. All specifications include controls, state by year, year by adoptive household status, and state by adoptive household status fixed effects as described previously in the paper.

Table 36: ATET Results Sectioned by Household Income using FAL Without California

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	-0.00753	-0.00476	-0.0161	-0.0318***
	(0.0145)	(0.00977)	(0.0157)	(0.00953)
N	1957144	1901320	1934634	1920606
Pre-trend Test (P-value)	0.3341	0.0010***	0.1867	0.2111

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 20. California is removed in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex female households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 37: Event Study Results Sectioned by Household Income using FAL Without California

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0124	-0.00506	-0.0299***	-0.0163
	(0.0161)	(0.0126)	(0.0112)	(0.0153)
β_{+1}	-0.0158	0.00123	0.0118	-0.00804
	(0.0184)	(0.0127)	(0.0230)	(0.0121)
β_{+2}	0.0164	0.00267	-0.0217	-0.0412**
	(0.0158)	(0.0190)	(0.0268)	(0.0167)
β_{+3}	-0.0146	-0.0395***	-0.00497	-0.0448***
	(0.0160)	(0.0153)	(0.0222)	(0.0172)
β_{+4}	-0.00379	-0.0128	-0.0355*	-0.0757***
	(0.0206)	(0.00853)	(0.0198)	(0.0181)
β_{+5}	-0.0285**	-0.0103	-0.0782***	-0.0897***
	(0.0129)	(0.0305)	(0.0217)	(0.0236)
β_{+6}				-0.125**
				(0.0508)
N	1957112	1901292	1934616	1920592
Pre-trend Test (P-value)	0.3341	0.0010***	0.1867	0.2111

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 21. California is removed in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex female households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 38: ATET Results Sectioned by Household Income using FAL Without California

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	-0.000994	-0.0160**	0.00428	-0.00817
	(0.00846)	(0.00645)	(0.00699)	(0.00994)
N	1954060	1923812	1909000	1924350
Pre-trend Test (P-value)	0.1266	0.0019***	0.0012***	0.0025***

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 22. California is removed in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex male households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 39: Event Study Results Sectioned by Household Income using FAL Without California

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	-0.00297	-0.0212***	-0.00895	0.00152
	(0.00549)	(0.00805)	(0.00814)	(0.00986)
β_{+1}	0.0114	-0.0107	0.00736	-0.0142
	(0.0136)	(0.00793)	(0.0103)	(0.0110)
β_{+2}	-0.0171	-0.00829	0.0201***	-0.0161
	(0.0132)	(0.00995)	(0.00768)	(0.0127)
β_{+3}	-0.0103	-0.0293***	0.000743	0.0117
	(0.00685)	(0.00632)	(0.00987)	(0.0143)
β_{+4}	0.0120**	-0.0103**	0.00589	-0.00369
	(0.00584)	(0.00477)	(0.00950)	(0.0103)
β_{+5}	0.00551	-0.0507***	0.00417	-0.0334**
	(0.0129)	(0.00476)	(0.00635)	(0.0162)
β_{+6}				-0.0115
				(0.0382)
N	1954054	1923808	1908992	1924338
Pre-trend Test (P-value)	0.1266	0.0019***	0.0012***	0.0025***

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 23. California is removed in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex male households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 40: ATET Results Sectioned by Household Income using SSM Without California

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	-0.0172	-0.0121	-0.00286	-0.0187
	(0.0106)	(0.0137)	(0.0163)	(0.0155)
N	1954396	1898806	1931908	1917360
Pre-trend Test (P-value)	0.0417**	0.0019***	0.2221	0.1415

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 20. California is removed in all models. This model uses SSM as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex female households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 41: Event Study Results Sectioned by Household Income using SSM Without California

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0138	-0.0176	-0.0188	-0.0373**
	(0.0128)	(0.0164)	(0.0179)	(0.0185)
β_{+1}	-0.0333**	-0.0150	0.0408	0.0174
	(0.0134)	(0.0143)	(0.0442)	(0.0209)
β_{+2}	-0.0219**	0.0312**	-0.00949	-0.0294*
	(0.00961)	(0.0140)	(0.0206)	(0.0155)
β_{+3}	-0.00706	-0.0410***	0.0246*	-0.0433**
	(0.0115)	(0.0156)	(0.0131)	(0.0183)
β_{+4}				-0.00298
				(0.176)
N	1954396	1898806	1931908	1917360
Pre-trend Test (P-value)	0.0417**	0.0019***	0.2221	0.1415

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 21. California is removed in all models. This model uses SSM as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex female households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 42: ATET Results Sectioned by Household Income using SSM Without California

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	-0.00640	-0.0312***	-0.00394	0.00335
	(0.00582)	(0.00944)	(0.00858)	(0.00806)
N	1952200	1921816	1906564	1919990
Pre-trend Test (P-value)	0.0320**	0.0186**	0.6753	0.0575*

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 22. California is removed in all models. This model uses SSM as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex male households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 43: Event Study Results Sectioned by Household Income using SSM Without California

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0120*	-0.0263**	-0.0123	0.00104
	(0.00620)	(0.0116)	(0.00810)	(0.00987)
β_{+1}	0.00605	-0.0270***	-0.00333	-0.0165
	(0.0103)	(0.00747)	(0.0137)	(0.0103)
β_{+2}	-0.00793	-0.0434***	0.0206**	0.00912
	(0.00741)	(0.00690)	(0.00900)	(0.0108)
β_{+3}	-0.00217	-0.0648***	-0.00455	0.0383***
	(0.00714)	(0.0106)	(0.0113)	(0.0107)
β_{+4}				-0.0149
				(0.0112)
N	1952200	1921816	1906564	1919990
Pre-trend Test (P-value)	0.0320**	0.0186**	0.6753	0.0575*

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 23. California is removed in all models. This model uses SSM as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex male households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 44: Event Study Results Sectioned by Household Income using FAL With California

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	-0.00827	-0.00713	-0.0192	-0.0338***
	(0.0140)	(0.00924)	(0.0154)	(0.0110)
N	2204566	2143740	2171512	2171402
Pre-trend Test (P-value)	0.6163	0.0001***	0.6493	0.0110**

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 20. California is included in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex female households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 45: Event Study Results Sectioned by Household Income using FAL With California

	(1)	(2)	(3)	(4)
	Same-sex Women Quartile 1	Same-Sex Women Quartile 2	Same-Sex Women Quartile 3	Same-Sex Women Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	-0.0120	-0.00202	-0.0319***	-0.0126
	(0.0142)	(0.0111)	(0.00916)	(0.0141)
β_{+1}	-0.0171	-0.00418	0.00481	-0.0193
	(0.0163)	(0.0123)	(0.0212)	(0.0134)
β_{+2}	0.0129	-0.00358	-0.0157	-0.0306**
	(0.0168)	(0.0132)	(0.0241)	(0.0143)
β_{+3}	-0.0153	-0.0337*	-0.0218	-0.0573***
	(0.0125)	(0.0184)	(0.0236)	(0.0176)
β_{+4}	-0.00228	-0.0146*	-0.0374*	-0.0857***
	(0.0207)	(0.00843)	(0.0191)	(0.0166)
β_{+5}	-0.0274**	-0.0139	-0.0885***	-0.0969***
	(0.0126)	(0.0295)	(0.0233)	(0.0240)
β_{+6}				-0.100**
				(0.0403)
N	2204534	2143712	2171494	2171388
Pre-trend Test (P-value)	0.6163	0.0001***	0.6493	0.0110**

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 21. California is included in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex female households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.

Table 46: Event Study Results Sectioned by Household Income using FAL With California

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β	0.00292	-0.0110**	0.00681	-0.0161*
	(0.00814)	(0.00559)	(0.00744)	(0.00945)
N	2201478	2172172	2144938	2171998
Pre-trend Test (P-value)	0.0763*	0.6884	0.0322**	0.0000***

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 1) and specifications as Table 22. California is included in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex male households. All specifications include controls, state by year, year by household type, and sttreate by household type fixed effects as described previously in the paper.

Table 47: Event Study Results Sectioned by Household Income using FAL With California

	(1)	(2)	(3)	(4)
	Same-sex Men Quartile 1	Same-Sex Men Quartile 2	Same-Sex Men Quartile 3	Same-Sex Men Quartile 4
	Adopt	Adopt	Adopt	Adopt
β_0	0.00541	-0.0174***	-0.0102	-0.00232
	(0.00560)	(0.00655)	(0.00735)	(0.00830)
β_{+1}	0.0136	-0.0138*	0.00949	-0.0127
	(0.0122)	(0.00748)	(0.0102)	(0.00957)
β_{+2}	-0.0107	0.00486	0.0117	-0.0199*
	(0.0109)	(0.00816)	(0.00903)	(0.0120)
β_{+3}	-0.00693	-0.00962**	0.0301***	-0.0318**
	(0.0128)	(0.00468)	(0.00941)	(0.0149)
β_{+4}	0.0121**	-0.00911**	0.00782	-0.00808
	(0.00579)	(0.00464)	(0.0101)	(0.00977)
β_{+5}	0.00607	-0.0471***	0.00436	-0.0356**
	(0.0129)	(0.00477)	(0.00705)	(0.0152)
β_{+6}				-0.0128
				(0.0389)
N	2201472	2172168	2144928	2171988
Pre-trend Test (P-value)	0.0763*	0.6884	0.0322**	0.0000***

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Note: This table uses the same equation (Equation 2) and specifications as Table 23. California is included in all models. This model uses FAL as the legalization method. Model (1) uses the first quartile of household income, Model (2) uses the second quartile of household income, Model (3) uses the third quartile of household income, Model (4) uses the fourth quartile of household income. All models use same-sex male households. All specifications include controls, state by year, year by household type, and state by household type fixed effects as described previously in the paper.