

# Interracial Marriage, Migration and *Loving*

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**Abstract** The United States Supreme Court decision in the case of *Loving v. Virginia* in 1967, which forced 16 Southern states to strike down their anti-miscegenation laws, creates a unique opportunity to explore the impact of an exogenous change in a state's laws regulating interracial marriages. This study investigates the relationship between anti-miscegenation laws, black/white interracial marriage and black Americans' geographical distribution using three decades of the U.S. census data. The results suggest that the timing and voluntary/involuntary repeal of statutes banning black/white interracial marriages impacted the locational distribution of married black males. The relationship is less clear-cut for black females. However, length of exposure to anti-miscegenation laws is found to be related to the geographical sorting patterns of both black males and females. A few patterns in the data suggest that social norms and local culture may be influential in this relationship and the findings imply that unless a society is ready to change, the government cannot fully offset the negative impact of past bans and punishments.

**Keywords** Interracial marriage · Migration · Anti-miscegenation laws · U.S. Supreme Court

**JEL Classifications** J12 · J15

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### THE LAND OF HOPE

Yes, we are going to the north!  
 I don't care to what state,  
 Just so I cross the Dixon line,  
 From this southern land of hate,  
 Lynched and burned and shot and hung,  
 And not a word is said.  
 No law whatever to protect—  
 It's just a "nigger" dead.  
 Go on, dear brother; you'll ne'er regret;  
 Just trust in God; pray for the best,  
 And at the end you're sure to find  
 "Happiness will be thine".  
 by William Crosse (Bontemps and Conroy 1966)

## Introduction

The harmony of relationships between races in a society like the U.S. depends on the level and quality of interaction between different racial groups. Interracial marriages constitute the most intimate type of social contact between races. The repeal of anti-miscegenation laws by the U.S. Supreme Court in the case of *Loving v. Virginia* in 1967 creates a unique opportunity to explore the impact of an exogenous change in a state's laws regulating black/white interracial marriages.

This study investigates unequal interracial marriage rates (IMRs) and their persistence among four state groups categorized by the time of the repeal of anti-miscegenation laws to uncover the relationship between black/white interracial marriages, state of birth, and married blacks' state of residence in the U.S.<sup>1</sup>

From the early twentieth century to the 1970s, the U.S. witnessed a massive migration of Southern-born black Americans to the West and to the North in search of better lives.<sup>2</sup> This mass emigration of blacks, also known as the "Great Migration", resulted in a drastic change in the geographical distribution of the black population (Fligstein 1981; Marks 1989; Goodwin 1990; Lemann 1991; Trotter 1991; Collins 1997; Tolnay et al. 2002; Tolnay 2003). In the first decade of the twentieth century, 89.7 % of blacks lived in the South, while only 4.4 % lived in the Northeast, and 5.6 % lived in the Midwest. However, by the 1970s only 53 % of blacks lived in the South, while 19.2, 20.2, and 7.5 % lived in the Northeast, Midwest and West respectively. While it was documented that the post-1970 period was marked by reverse

<sup>1</sup>Black/white interracial marriage rate for black males is defined as the ratio of black males married to white females to the ratio of married black males with either a black or a white spouse. Black female IMR is defined similarly.

<sup>2</sup>There are various definitions of the "South". In this study, I adopt the definition of the Southern region used by the U.S. Census Bureau, which includes Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia and the District of Columbia.

migration of blacks, geographical distribution of blacks in the 2000 and 2010 censuses are similar to that in the 1970 census.<sup>3</sup>

The literature on the Great Migration of blacks focuses both on economic and social forces. Previous literature considers racial violence and inequality, which were promoted by the Jim Crow laws in effect from 1877 until the mid-1970s in the South, and deteriorating economic conditions among the most important push factors that drove migrants to leave their places of origin (Fligstein 1981; Grossman 1989; Marks 1989; Goodwin 1990; Lemann 1991; Trotter 1991; Tolnay and Beck 1992).

Traces of racial segregation can be found much earlier even in the domain of intimate relationships. The anti-miscegenation laws banning interracial relationships between blacks and whites were enforced as early as 1662 (see Browning 1951; Newbeck 2004; and Wallenstein 2004). In nine states and in D.C. black/white interracial marriage has never been illegal. Forty-one states outlawed black/white interracial marriage at some point in U.S. history. Table 1 shows a list of states categorized by the year of their ban of anti-miscegenation laws. Virginia was the first to ban interracial marriages, but its anti-miscegenation laws had been effective for 305 years. Eleven of these 41 states repealed their anti-miscegenation laws in the nineteenth century, and with the lead of California in 1948, another 14 repealed their laws before 1967. Maryland was the last state that voluntarily revoked its anti-miscegenation statutes in 1967. Sixteen Southern states were forced to do so by the U.S. Supreme Court ruling in the case of *Loving v. Virginia*, 388 U.S. 1 (1967).<sup>4</sup> On June 12, 1967, the Chief Justice delivered the opinion of the Court:

In June 1958, two residents of Virginia, Mildred Jeter, a Negro woman, and Richard Loving, a white man, were married in the District of Columbia pursuant to its laws. Shortly after their marriage, the Lovings returned to Virginia... On January 6, 1959, the Lovings pleaded guilty to the charge and were sentenced to 1 year in jail; however, the trial judge suspended the sentence for a period of 25 years on the condition that the Lovings leave the State and not return to Virginia together for 25 years... Marriage is one of the “basic civil rights of man”.... The Fourteenth Amendment requires that the freedom of choice to marry not be restricted by invidious racial discriminations... These convictions must be reversed.<sup>5</sup>

The U.S. map in Fig. 1 shows these four main state groups: 9 “Never illegal” states and D.C., 11 states in the “Nineteenth-century legalized” group, 14 states in the “1948–1967 Legalized” group and the “*Loving*” group of 16 states that had to remove

<sup>3</sup>As of the 2000 census enumeration, 54.8 % of blacks lived in the South, while 17.6, 18.8 and 8.9 % lived in the Northeast, Midwest, and West respectively. Similarly, as of 2010 census enumeration, 56.5 % of blacks lived in the South, while 16.8, 17.9 and 8.8 % lived in the Northeast, Midwest, and West respectively. See Tolnay (2003) and Rastogi et al. (2010).

<sup>4</sup>The *Loving* state group does not entirely correspond to the definition of the Southern region used by the U.S. Census Bureau. The *Loving* states also include Missouri and exclude Maryland and D.C. Nevertheless, I loosely label the *Loving* states as the Southern states.

<sup>5</sup>FindLaw: *Loving v. Virginia*, 388 U.S. 1 (1967) <http://laws.findlaw.com/us/388/1.html>.

**Table 1** States grouped by their ban of anti-miscegenation laws

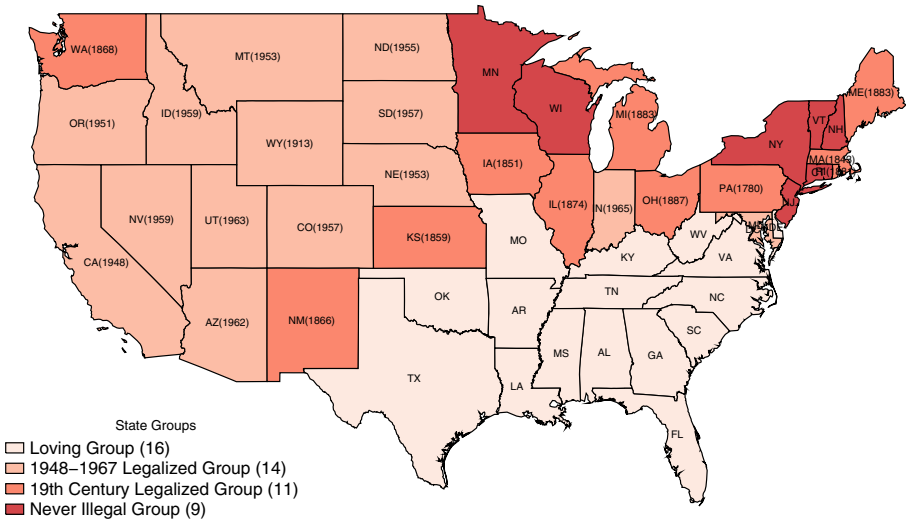
<i>Loving</i> states	1948–1967 legalized	19th-century legalized	Never illegal
Alabama	California	Illinois	Alaska
Arkansas	Oregon	Iowa	Connecticut
Delaware	Montana	Kansas	D.C.
Florida	N. Dakota	Maine	Hawaii
Georgia	Colorado	Massachusetts	Minnesota
Kentucky	S. Dakota	Michigan	New Hampshire
Louisiana	Idaho	New Mexico	New Jersey
Mississippi	Nevada	Ohio	New York
Missouri	Arizona	Pennsylvania	Vermont
N. Carolina	Nebraska	Rhode Island	Wisconsin
Oklahoma	Utah	Washington	
S. Carolina	Indiana		
Tennessee	Wyoming		
Texas	Maryland		
Virginia			
West Virginia			

Sources: Browning (1951) and Newbeck (2004). Fryer (2007) classifies Kansas, New Mexico and Washington in the Never illegal group because these states repealed these laws before the 1900s and before statehood. Here I classify them in the Nineteenth-century legalized group because regardless of statehood, they repealed these laws before the 1900s

the ban on black/white interracial marriages after the U.S. Supreme Court ruling in 1967. The black/white IMRs differed remarkably among the residents of these four state groups.

This study contributes to the body of research on the black/white interracial marriage patterns and geographical sorting of interracially married individuals in the U.S. Fryer (2007) provides a detailed review of interracial marriage trends during the twentieth century and evaluates the explanatory power of current theories of family formation. The author reports different IMRs in different state groups and shows that IMRs in the U.S. are related to individual education, anti-miscegenation laws, and regions and states of residence among other things. Different from the previous research, the current study explores the relationship between statutes banning interracial marriages, the timing of repeal of these bans, and the interaction between the state of birth and state of residence.

The contribution of this study is twofold. This study is the first attempt to explore the relationship between the statutes banning marriage and migration patterns in the U.S. Second, analyzing the relationship between the U.S. Supreme Court repeal of statutes banning interracial marriages and the geographical distribution of blacks may



**Fig. 1** States grouped by the time of the repeal of anti-miscegenation laws

help us to understand the future of same-sex couples and same-sex marriages, which is a weighty societal issue.<sup>6</sup>

Five percent samples of the 1980, 1990 and 2000 U.S. census data indicate that black IMRs are highest in the non-*Loving* states and lowest in the *Loving* states. Black individuals who were born in the *Loving* states and married to white individuals are less likely to reside in the *Loving* states than those who were born in the *Loving* states and married to black individuals. However, for *Loving*-born blacks who entered the marriage market after the anti-miscegenation laws were struck down in 1967, the gap in the probability of residing in the *Loving* states between those with black and white spouses is much smaller. Because the U.S. Supreme Court decision in the case of *Loving v. Virginia* did not legally affect non-*Loving*-born blacks, I use the changes in the probability of residing in the *Loving* states for non-*Loving*-born blacks to control for generation-specific trends in migration. The empirical analysis provides evidence that the time of repeal of statutes banning black/white interracial marriages had an impact on the sorting of married black males into different state categories. For black females the relationship between the repeal of anti-miscegenation laws and migration is less clear-cut. Nevertheless, I find that the length of exposure to anti-miscegenation laws affected the geographical sorting patterns of both black males and females.

Regression analysis confirms that the results are robust to controlling for observable characteristics such as education, absolute and relative unemployment rates, sex ratio, group size, divorce rates, divorce laws, and residential segregation. The estimates become larger when the distance migrated is minimized, suggesting that

<sup>6</sup>Marriage creates economic surplus for both parties by joint consumption, marriage specific investments, division of labor, and risk pooling. As Hamermesh (2011) argues, domestic partnership fails to create as large an economic surplus as marriage would have created. The author estimates an upper-bound value of \$3 billion for California to gain in marriage surplus per year if it were to allow same-sex marriages.

individuals respond to monetary and psychological costs associated with moving. When three subgroups of the non-*Loving* states (1948–1967 legalized, Nineteenth-century legalized, and Never illegal) are considered separately as control groups, I find that the results are driven mainly by Never illegal states.

“Data” section explains and summarizes the data sets used while “Estimation strategy” section presents the econometrics framework. “Empirical results” section presents empirical findings and robustness tests, and Conclusion includes discussion of findings and suggestions for future research.

## Data

I use 5 % samples of the IPUMS based on the 1980, 1990, and 2000 U.S. census data sets (Ruggles et al. 2004). The samples are restricted to all married U.S.-born black males and black females aged 18–60.<sup>7</sup> I exclude those with spouses of other races (Native Americans, Alaskan Natives, Asians, Pacific Islanders and others) because there is a small number of black individuals in this category and interracial marriages between blacks and non-whites were not prohibited in almost all of the states.<sup>8</sup> Although interracial marriage rate is very low for black females, they are included in the analysis to provide a complete picture. The small sample size of interracially married black females yields large standard errors and imprecisely estimated coefficients in most specifications.<sup>9</sup> Maryland is excluded from the sample because categorizing it as a non-*Loving* state would be problematic. Although Maryland voluntarily repealed its anti-miscegenation law, it did so in 1967 right before the U.S. Supreme Court forced their ban.<sup>10</sup> The census person weights were used in all of the statistical calculations when appropriate, but unweighted estimates are similar. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators.

Table 2 displays sample sizes and interracial marriage rates (IMRs) by state group of birth and state group of residence (*Loving* v. non-*Loving*). The left panel of Table 2

<sup>7</sup>The samples include all married individuals regardless of the number of marriages. Foreign-born blacks (whites) make up 3.9, 4.5, and 8 % (4.9, 5, and 7.8 %) of the total black (white) population in 1980, 1990 and 2007, respectively in the U.S. (see Gibson and Jung 2006; and Grieco 2010). Following Fryer (2007), I focus on U.S.-born blacks to minimize problems that may arise from immigration and nativity issues. Batson et al. (2006) find that U.S.-born blacks are more likely to marry whites compared to non-U.S.-born blacks. Qian and Lichter (2011) confirm these findings for U.S.-born black men but not for U.S.-born black women.

<sup>8</sup>Only Louisiana and Maryland had laws banning marriages between blacks and Native Americans. This study focuses exclusively on black/white marriages and all individuals of other races are dropped from the sample because black/non-white interracial marriages are not common. Calculations based on the Current Population Survey reveal that black/non-white intermarriage rates are extremely low at 0.9, 0.8 and 1.1 in 1980, 1990 and 2000 respectively (compared to black/white intermarriage rates at 4.7, 5.4, and 8.2 in 1980, 1990 and 2000 respectively). Author’s calculations are based on Table60 <http://www.census.gov/compendia/statab/2011/tables/11s0060.xls> of the U.S. Bureau of the Census 2010.

<sup>9</sup>In 2000, black/white IMR is only 2.6 % for black females, while it is 7.7 % for black males. The IMR for black females is still very low at 3.6 % in the 2010 census, while it is 8.1 % for black males.

<sup>10</sup>The results do not change when Maryland is included in the sample.

**Table 2** Sample sizes, percentages and interracial marriage rates

	Sample sizes & percentages			IMRs		
	1980	1990	2000	1980	1990	2000
<b>Black male</b>						
By state of residence						
<i>Loving</i> states	70953 [54.5]	66027 [61.5]	74927 [63.8]	1.4	2.7	4.9
Non- <i>Loving</i> states	59248 [45.5]	41320 [38.5]	42474 [36.2]	5.6	8.6	12.2
By state of birth						
<i>Loving</i> states	103176 [79.2]	81990 [76.4]	81801 [69.7]	2.3	3.6	5.5
Non- <i>Loving</i> states	27025 [20.8]	25357 [23.6]	35600 [30.3]	7.1	9.8	12.3
Overall	130201 [100]	107347 [100]	117401 [100]	3.3	5.3	7.7
<b>Black female</b>						
By state of residence						
<i>Loving</i> states	75742 [55.4]	69735 [62.3]	77545 [64.5]	0.4	0.9	1.5
Non- <i>Loving</i> states	60911 [44.6]	42258 [37.7]	42636 [35.6]	1.5	2.9	4.7
By state of birth						
<i>Loving</i> states	107343 [78.6]	85130 [76.0]	83819 [69.7]	0.6	1.0	1.6
Non- <i>Loving</i> states	29310 [21.4]	26863 [24.0]	36362 [30.3]	2.1	3.6	5.0
Overall	136653 [100]	111993 [100]	120181 [100]	0.9	1.7	2.6

5 % IPUMS samples of the 1980, 1990 and 2000 U.S. census data sets are used. Sample percentages are given in brackets. The samples are restricted to all U.S.-born married black males and black females aged 18–60 married to either black or white individuals. Those who were born in or are residents of Maryland are excluded from the sample. The census person weights are used in all of the statistical calculations when appropriate. Black/white interracial marriage rate for black males is defined as the ratio of black males married to white females to the ratio of married black males with either a black or a white spouse. Black female IMR is defined similarly

shows that in each census year the majority of married blacks, roughly 70 to 80 %, were born in the *Loving* states.<sup>11</sup> When individuals are categorized by their state

<sup>11</sup> Interestingly, the percentage of married blacks who were born in the *Loving* states decreased from 79 % in 1980 to 70 % in 2000.

group of residence, a strong net emigration from the *Loving* states becomes apparent. The percentage of *Loving*-born blacks (79, 76, and 70 % in the 1980, 1990, and 2000 census samples respectively) is much larger than the percentage of blacks residing in the *Loving* states in each corresponding census enumeration for both males and females (55, 62 and, 64 % in the 1980, 1990, and 2000 census samples respectively).<sup>12</sup>

The right panel of Table 2 shows the IMRs by state group of birth and state group of residence for each census year.<sup>13</sup> The black female IMR is much smaller than black male IMR in every census enumeration. As expected, the overall IMRs have increased over the course of three decades: from 3.3 to 7.7 % for black males and from 0.9 to 2.6 % for black females.<sup>14</sup> An interesting picture emerges when individuals are categorized by their state group of residence. The black IMRs among the residents of the *Loving* states have never reached the levels seen among the residents of the non-*Loving* states.<sup>15</sup>

Table 2 reveals that the black IMRs are larger in every corresponding cell when individuals are categorized by their state group of birth rather than their state group of residence for both males and females. Interestingly, the IMRs for blacks who were born in the non-*Loving* states are larger than the IMRs for blacks who are residing in the non-*Loving* states.

The 1980 census data set is the only data set that contains detailed information that allows one to calculate the year of first marriage. Using the 1980 census data and combining information on age, age at first marriage, and number of marriages, I calculate IMRs by state of birth, state of residence, and year of first marriage. The first column of Table 3 reports that the IMR for black males and females in the 1980 census is higher when individuals are categorized by their state of birth compared to when they are categorized by their state of residence.<sup>16</sup> Interestingly, IMR for black males who married before 1967 is 0.41 % among *Loving* residents while it is 1.85 % for those who married after 1967, an increase of 1.44 percentage points. IMR for the non-*Loving*-residing black males who married before 1967 is 1.8 %, and it is 7.5 % for those who married after 1967, an increase of 5.7 percentage points. As a result, for black males, the difference in IMR gaps between non-*Loving* and *Loving* residents

<sup>12</sup>Table 2 shows that the total number of married black males and females decreased from the 1980 to 1990 census and increased from the 1990 to 2000 census. After examining the census data sets carefully, I find that the total number of black males and females increased over the time. The total number of black males is 265,059, 274,569, and 300,759 in the 1980, 1990, and 2000 censuses respectively. The variation in the sample sizes in this study can be attributable to the fluctuations in the number of married blacks in the total sample of blacks, which may be due to changing attitudes towards marriage and/or higher incarceration rates of black males as found in Charles and Luoh (2010).

<sup>13</sup>Here I focus on heterosexual marriages between blacks and whites.

<sup>14</sup>The 2010 census data show that black male IMR has gone up to 8.1 %, and black female IMR has gone up to 3.6 %. Author's calculations are based on *tableFG4* on the U.S. Census Bureau web page: <http://www.census.gov/population/www/socdemo/hh-fam/cps2010.html>.

<sup>15</sup>The black male (female) IMRs are 5.6, 8.6, and 12.2 % (1.5, 2.9, and 4.7 %) in the 1980, 1990, and 2000 censuses respectively in the non-*Loving* states, while the black male (female) IMRs are only 1.4, 2.7, and 4.9 % (0.6, 1.0, and 1.6 %) for corresponding census years in the *Loving* states.

<sup>16</sup>For instance, *Loving*-born and non-*Loving*-born black male IMR is 1.8 % and 6.1 %, respectively, while IMR among the residents of *Loving* and non-*Loving* states is lower at 1.2 % and 4.6 % respectively.



**Table 3** Distribution of black/white IMRs for all first marriages, 1980 census

	IMRs by year of first marriage			
	Entire period	Before 1967	After 1967	Difference (After-Before)
<b>Black male</b>				
By state of residence				
<i>Loving</i> states	1.16	0.41	1.85	1.44
Non- <i>Loving</i> states	4.55	1.81	7.51	5.70
By state of birth				
<i>Loving</i> states	1.78	0.73	2.95	2.22
Non- <i>Loving</i> states	6.07	2.86	7.99	5.13
Overall	2.67	1.06	4.25	3.19
<b>Black female</b>				
By state of residence				
<i>Loving</i> states	0.36	0.22	0.49	0.27
Non- <i>Loving</i> states	1.32	0.59	2.18	1.59
By state of birth				
<i>Loving</i> states	0.48	0.28	0.74	0.46
Non- <i>Loving</i> states	1.85	0.98	2.42	1.44
Overall	0.78	0.39	1.20	0.81

5 % IPUMS, the 1980 U.S. census data set is used. The sample is restricted to all U.S.-born black males and black females aged 15–60 in their first marriages who have either a black or a white spouse. The census person weights are used in all of the statistical calculations when appropriate. Black/white interracial marriage rate for black males is defined as the ratio of black males married to white females to the ratio of married black males with either a black or a white spouse. Black female IMR is defined similarly

is large at 4.26 percentage points (see last column). A similar pattern arises when individuals are categorized by their state of birth. The difference in IMR gaps between non-*Loving*-born and *Loving*-born black males is smaller (at 2.9 percentage points) than the difference in IMR gaps between the residents of the non-*Loving* and *Loving* states (4.26 percentage points). A similar pattern is observed for black females.

To fully capture the geographical distribution of blacks by spousal race, Table 4 calculates IMRs by interacting state group of birth and state group of residence. The first row and first column of Table 4 reveals that *Loving*-born black males who are also residing in *Loving* states have the lowest IMRs at 1 %. IMRs for *Loving*-born black males who moved to one of the non-*Loving* states is much higher at 3.4 %, which is followed by non-*Loving*-born black males residing in *Loving* states at 5 %, and not surprisingly the IMR is highest at 6.2 % among the non-*Loving*-born black males residing in one of the non-*Loving* states. The last column of Table 4 shows that the IMR gap for marriages that took place after and before 1967. The gap is the

**Table 4** Distribution of black/white IMRs for all first marriages, 1980 census

State of birth	State of residence	IMRs by year of first marriage			
		Entire period	Before 1967	After 1967	Difference (After-Before)
<b>Black male</b>					
<i>Loving</i>	<i>Loving</i>	1.01	0.36	1.63	1.27
<i>Loving</i>	<i>Non-Loving</i>	3.36	1.33	6.65	5.32
<i>Non-Loving</i>	<i>Loving</i>	4.99	2.54	5.99	3.45
<i>Non-Loving</i>	<i>Non-Loving</i>	6.19	2.89	8.24	5.35
<b>Black female</b>					
<i>Loving</i>	<i>Loving</i>	0.32	0.21	0.45	0.24
<i>Loving</i>	<i>Non-Loving</i>	0.84	0.40	1.67	1.27
<i>Non-Loving</i>	<i>Loving</i>	1.20	0.86	1.35	0.49
<i>Non-Loving</i>	<i>Non-Loving</i>	1.91	0.98	2.55	1.57

5 % IPUMS, the 1980 U.S. census data set is used. The sample is restricted to all U.S.-born black males and black females aged 15–60 in their first marriages who have either a black or a white spouse. The census person weights are used in all of the statistical calculations when appropriate. Black/white interracial marriage rate for black males is defined as the ratio of black males married to white females to the ratio of married black males with either a black or a white spouse. Black female IMR is defined similarly

smallest for *Loving*-born blacks who are currently residing in *Loving* states (1.3 and 0.2 percentage points for black males and females respectively). Those who were born in non-*Loving* states currently residing in one of the *Loving* states have the second smallest IMR gap. The IMR gap for black males who were born in *Loving* states but moved to one of the non-*Loving* states and for black males who were born in non-*Loving* states and never moved are almost identical. Black female IMR patterns are very similar to black male IMR patterns.

Tables 2, 3, and 4 suggest that the final geographical sorting of interracially married blacks into two state groups (*Loving* v. non-*Loving*) is different than the geographical sorting of those with black spouses, and state group of birth matters in this differential sorting. Local culture, social norms and acceptance of interracial marriages may be important determinants of varying IMRs across different state groups and even banning anti-miscegenation laws may not fully undo the effects of deeply ingrained attitudes towards interracial marriages.

### Estimation strategy

To investigate the relationship between the timing of the ban of anti-miscegenation laws and the sorting of married blacks, I calculate the probability of residing in the *Loving* states by spousal race for those who were 18 years of age or younger in 1967, who thus were more likely to marry after 1967 and were not legally affected

**Table 5** Fraction of all first marriages that occurred after 1967 by generation and spousal race

	All ages ( $15 \leq age_{1967} \leq 60$ )	Older ( $age_{1967} > 18$ )	Younger ( $age_{1967} \leq 18$ )
<b>Black male</b>			
All	50.3 [111,581]	26.2 [74,362]	98.4 [37,219]
Black wife	49.5 [108,632]	25.7 [73,010]	98.4 [35,622]
White wife	80.0 [2,949]	57.1 [1,352]	99.4 [1,597]
<b>Black female</b>			
All	47.9 [119,907]	18.1 [73,928]	95.7 [45,979]
Black husband	47.7 [118,982]	18.0 [73,522]	95.7 [45,460]
White husband	73.8 [925]	42.1 [406]	98.6 [519]

5 % IPUMS, the 1980 U.S. census data set is used. The sample is restricted to all U.S.-born black males and black females aged 15–60 in their first marriages who are married to either black or white individuals. Sample sizes for each cell are reported in brackets

by anti-miscegenation laws, and then compare these differences with corresponding differences for blacks who were 19 years of age or older in 1967.

The estimation strategy described above makes sense if the majority of individuals marry after they turn 18 years of age. I use the 1980 census data to substantiate the claim that the majority of individuals marry after they turn 18. Table 5 reports the fraction of all first marriages that occurred after 1967 by age groups and spousal race. The last column of Table 5 shows that regardless of the race of the spouse, almost all black males (98.4 %) and black females (95.7 %) who were 18 years of age or younger as of 1967, i.e. those who were 31 years of age or younger as of the 1980 census enumeration, married after 1967.<sup>17</sup>

Given that almost all blacks married after they turned 18 years old, a typical individual who was 18 or younger in 1967 experienced a marriage market free of the anti-miscegenation laws. An individual who was 18 or younger in 1967 was 31, 41, and 51 or younger (younger generation hereafter) as of the 1980, 1990, and 2000

<sup>17</sup>Interestingly, the first column shows that the majority of black males and females (80 and 74 % respectively) with white spouses married after 1967, while only half of the black males and females (50 and 48 % respectively) with black spouses married after 1967.

census enumerations respectively.<sup>18</sup> Therefore, if the anti-miscegenation laws matter to the geographical distribution of inter- and intraracially married blacks differentially, the impact of the repeal of these laws should be smaller for individuals who were 18 or younger in 1967 than for those blacks who were 19 and older (older generation hereafter) in 1967.<sup>19</sup> A comparison between the inter- and intraracially married younger and older generation of individuals generates the double-difference:

$$DD_{Loving-born} = \left( P_{W,L}^{younger} - P_{W,L}^{older} \right) - \left( P_{B,L}^{younger} - P_{B,L}^{older} \right), \quad (1)$$

where  $P_{r,L}^g$  is the probability of residing in the *Loving* states for married *Loving*-born blacks of generation  $g$  (younger or older) with a spouse of race  $r$  (white or black).<sup>20</sup>

The estimator in Eq. 1 assumes that if it were not for the U.S. Supreme Court decision in the case of *Loving v. Virginia*, the differences in the probabilities of residing in the *Loving* states for the younger and older generations of *Loving*-born blacks would have been similar across spousal races. It is important to keep in mind that the U.S. Supreme Court decision and changes in the statutes reflect the changes in social environment and norms brought about by the Civil Rights Movement. Because the U.S. Supreme Court decision did not legally affect non-*Loving*-born blacks, I use the changes in the probability of residing in the *Loving* states for non-*Loving*-born blacks to control for generation-specific trends in migration and calculate the triple-difference:

$$DDD = DD_{Loving-born} - DD_{non-Loving-born}, \quad (2)$$

where  $DD_{non-Loving-born}$  is the double-difference estimator for the non-*Loving*-born blacks, which measures the differences in the probability of residing in the

<sup>18</sup>The 2010 census data were not included in the analysis because the older generation would have been 61 years of age or older as of 2010 and this would completely wipe out the older generation in the 2010 sample.

<sup>19</sup>Intraracial marriages refer to those between two individuals of the same race.

<sup>20</sup>This study uses a difference-in-differences estimation framework even though the unique structure of the question does not entirely correspond to a natural experiment in the classical sense. Wooldridge (2010) points out that the use of difference-in-differences is not unique to natural experiment and program evaluation settings and provides a clear explanation of the difference-in-differences estimator. In its simplest form, the outcome of interest is observed for two groups for two periods. The “treatment group” is exposed to a treatment in the second period but not in the first period, while the “control group” is not exposed to the treatment during either period. In the current framework, the treatment can be thought of as the repeal of the anti-miscegenation laws in the 16 *Loving* states in 1967 by the U.S. Supreme Court. The outcome of interest is the likelihood of residing in the *Loving* states. To be precise, in this study, there are no “treatment” and “control” groups in the classical sense. In this study the “affected group” (similar to a treatment group) consists of blacks who have white spouses. The affected group of individuals were not allowed to marry/reside in the *Loving* states prior to 1967, while they were free to marry/reside anywhere after 1967. The “unaffected group” (similar to a control group) consists of blacks who have black spouses. The unaffected group of individuals were not impacted by these laws at all. Because marrying and residing in *Loving* states was illegal for those blacks with white spouses before 1967, it is not possible to construct a typical before-after comparison depending on spousal race. A novel solution is to look at those who were 18 or younger as of 1967 (younger generation), who thus were more likely to marry after 1967 and were not legally affected by anti-miscegenation laws, and then compare them with blacks who were 19 years of age or older in 1967 (older generation). Therefore, the younger generation is similar to the “after period” or period 2, and the older generation is similar to “before period” in a natural experiment setting.

*Loving* states for the non-*Loving*-born younger and older generations of blacks with white spouses (relative to the non-*Loving*-born blacks with black spouses), which are assumed to reflect intergenerational differences in migration behavior.<sup>21</sup>

I investigate the relationship between the *Loving v. Virginia* case and blacks' geographical distribution by estimating the intergenerational changes in the likelihood of residing in the *Loving* states for *Loving*-born blacks with white spouses (relative to *Loving*-born blacks with black spouses) and then compare the relative changes experienced by non-*Loving*-born blacks. The triple-difference estimate is calculated in the following regression framework:

$$\begin{aligned} \text{Loving}_i = & \beta_0 + \beta_1 Y_i + \beta_2 W_i + \beta_3 L_i + \beta_4 Y_i W_i \\ & + \beta_5 Y_i L_i + \beta_6 W_i L_i + \beta_7 Y_i W_i L_i + \epsilon_i, \end{aligned} \quad (3)$$

where  $\text{Loving}_i$  is an indicator variable that takes on a value of one for individual  $i$  if the state of residence is one of the *Loving* states.<sup>22</sup>  $Y_i$  is an indicator variable for the younger generation,  $W_i$  is an indicator variable for the presence of a white spouse,  $L_i$  is an indicator variable for those who were born in one of the *Loving* states, and  $\epsilon_i$  is a random error term. In this setup,  $\beta_7$  yields the triple-difference estimate.

Table 6 presents the summary statistics for the variables used in the analysis. Average age varies between 38.2 to 42.3, and is larger for black males. Black female to black male sex ratio, which is defined as the ratio of the total number of black females to the total number of black males by state, is approximately 1.24. I also control for destination state characteristics such as group size, which is the ratio of the total number of blacks to the total population by state. On average, black group size is around 15 %. The black male unemployment rate has increased approximately one percentage point from the 1980 to the 2000 census (from 9.2 to 10.4 %), while the white male unemployment rate is stable around 4.2 %. As a result, the black male unemployment rate is about 2.2–2.5 times larger than the white male unemployment rate.<sup>23</sup>

## Empirical results

Table 7 reports estimates from a linear probability model (LPM) for the basic specification, which does not control for additional observed characteristics. The upper and lower panels show the percentage of married black males and females, respectively, residing in the *Loving* states across generations by spousal race in the 1980, 1990, and 2000 census samples.

<sup>21</sup>  $DD_{\text{non-Loving-born}}$  is calculated similarly to Eq. 1.

<sup>22</sup> While the state group of residence in the year of the census enumeration is identified as the migration destination, some blacks may have moved to another state within their state group of birth, moved out of their state group of birth and returned, or moved after collection of the census data. Complete information on an individual's migration history would be ideal, but using the state of residence as the destination should not invalidate the results.

<sup>23</sup> Black and white unemployment rates, group size and sex ratio are calculated by using the 1970, 1980, 1990 and 2000 IPUMS census data sets. The table that shows the ratio of black male/white male unemployment rates, group size and sex ratio by states is available upon request from the author.

**Table 6** Summary statistics

	Black male			Black female		
	1980	1990	2000	1980	1990	2000
Reside in <i>Loving</i>	0.54 (0.49)	0.61 (0.48)	0.64 (0.48)	0.55 (0.49)	0.62 (0.48)	0.64 (0.47)
Born in <i>Loving</i>	0.79 (0.41)	0.76 (0.42)	0.69 (0.45)	0.79 (0.41)	0.76 (0.42)	0.69 (0.45)
White spouse	0.03 (0.17)	0.05 (0.22)	0.08 (0.26)	0.009 (0.09)	0.016 (0.12)	0.026 (0.16)
Younger generation	0.30 (0.46)	0.54 (0.49)	0.79 (0.41)	0.35 (0.47)	0.58 (0.49)	0.81 (0.39)
Born in <i>Loving</i> × White spouse	0.02 (0.13)	0.03 (0.16)	0.04 (0.18)	0.005 (0.06)	0.007 (0.08)	0.011 (0.10)
Born in <i>Loving</i> × Younger	0.21 (0.41)	0.38 (0.48)	0.53 (0.49)	0.25 (0.43)	0.41 (0.49)	0.55 (0.49)
Younger × White spouse	0.01 (0.11)	0.03 (0.18)	0.07 (0.25)	0.004 (0.06)	0.012 (0.10)	0.023 (0.15)
Younger × Born in <i>Loving</i> × White spouse	0.007 (0.08)	0.02 (0.12)	0.03 (0.17)	0.002 (0.04)	0.005 (0.07)	0.009 (0.09)
Age	39.54 (11.05)	40.90 (10.18)	42.30 (9.81)	38.16 (11.37)	39.73 (10.42)	41.38 (9.93)
Education	11.21 (3.40)	12.05 (4.01)	12.92 (2.49)	11.61 (2.81)	12.41 (3.96)	13.25 (2.38)
Black group size	0.15 (0.09)	0.16 (0.09)	0.16 (0.09)	0.15 (0.09)	0.16 (0.09)	0.16 (0.08)
Black female/male sex ratio	1.24 (0.06)	1.24 (0.06)	1.25 (0.06)	1.24 (0.05)	1.24 (0.06)	1.25 (0.06)
Unemployment rate						
Relative black/white	2.21 (0.30)	2.38 (0.34)	2.50 (0.36)	2.22 (0.29)	2.38 (0.34)	2.51 (0.36)
Black male	9.24 (2.81)	10.23 (2.76)	10.36 (2.60)	9.23 (2.80)	10.23 (2.77)	10.35 (2.60)
White male	4.19 (1.29)	4.28 (1.15)	4.15 (1.02)	4.17 (1.28)	4.26 (1.14)	4.13 (1.02)
Number of observations	130201	107347	117384	136653	111993	120171

This table shows the summary statistics of the variables used in the 1980, 1990, 2000 U.S. census data. Sample means are presented along with standard deviations in parentheses

The top panel of Table 7 indicates that the percentage of *Loving*-born black males residing in the *Loving* states across younger and older generations increased more

**Table 7** Percentage residing in the *Loving* states

		<i>Loving</i> born		Non- <i>Loving</i> born	
		White wife	Black wife	White wife	Black wife
Black male 1980 census	Older	27.8	62.2	5.9	8.7
	Younger	49.1	79.6	9.1	12.8
	<i>D</i>	21.3	17.4	3.2	4.1
	<i>DD</i>	3.9 (2.1)			-0.9 (1.3)
	<i>DDD</i>		4.8 (2.4)		
1990 census	Older	35.9	64.5	8.8	11.8
	Younger	55.3	81.7	11.6	17.7
	<i>D</i>	19.4	17.2	2.8	5.9
	<i>DD</i>	2.1 (2.1)			-3.1 (1.4)
	<i>DDD</i>		5.2 (2.5)		
2000 census	Older	41.3	69.4	9.6	15.4
	Younger	65.8	85.9	16.9	21.5
	<i>D</i>	24.5	16.4	7.3	6.1
	<i>DD</i>	8.1 (2.3)			1.2 (1.8)
	<i>DDD</i>		6.9 (2.9)		
Black female 1980 census	Older	36.6	62.7	7.0	7.9
	Younger	54.6	79.6	7.8	11.5
	<i>D</i>	18.0	16.9	0.8	3.6
	<i>DD</i>	1.1 (4.0)			-2.8 (2.2)
	<i>DDD</i>		3.9 (4.6)		
1990 census	Older	34.9	64.0	11.1	9.6
	Younger	57.2	82.4	12.5	16.5
	<i>D</i>	22.4	18.4	1.4	7.0
	<i>DD</i>	4.0 (3.9)			-5.6 (2.8)
	<i>DDD</i>		9.6 (4.8)		
Black female 1980 census	Older	36.6	62.7	7.0	7.9
	Younger	54.6	79.6	7.8	11.5
	<i>D</i>	18.0	16.9	0.8	3.6
	<i>DD</i>	1.1 (4.0)			-2.8 (2.2)
	<i>DDD</i>		3.9 (4.6)		
1990 census	Older	34.9	64.0	11.1	9.6
	Younger	57.2	82.4	12.5	16.5
	<i>D</i>	22.4	18.4	1.4	7.0
	<i>DD</i>	4.0 (3.9)			-5.6 (2.8)
	<i>DDD</i>		9.6 (4.8)		

**Table 7** (continued)

		<i>Loving</i> born		Non- <i>Loving</i> born	
2000 census	Older	47.5	71.1	13.0	15.8
	Younger	67.6	87.2	17.6	21.9
	<i>D</i>	20.1	16.2	4.5	6.1
	<i>DD</i>		3.9 (3.0)		-1.6 (3.2)
	<i>DDD</i>			5.5 (4.4)	

The younger generation consists of those who were 18 or younger as of 1967, who were thus 31, 41 and 51 years of age or younger as of the 1980, 1990 and 2000 census enumerations respectively. The older generation consists of those who were older than 31, 41 and 51 as of the 1980, 1990 and 2000 census enumerations respectively. Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. Unreported marginal effects coefficients after Probit model are similar. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

for those who have white spouses than for *Loving*-born black males who have black spouses in the 1980 sample; 27.8 and 62.2 % of older-generation *Loving*-born black males with white and black spouses, respectively, were residing in the *Loving* states in the 1980 census. For the younger generation of *Loving*-born black males, the percent residing in the *Loving* states with white and black spouses is much higher at 49.1 and 79.6 respectively. This overall increase in the probability of residing in the *Loving* states is consistent with the historical fact that migration out of the Southern states slowed down or even reversed after the 1970s. The double-difference estimate for *Loving*-born black males reveals that the percentage residing in the *Loving* states married to white women is 3.9 percentage points larger for the younger generation of blacks (who were not legally affected by anti-miscegenation laws) than for the older generation compared to *Loving*-born black males married to black women. While the double-difference estimate points out an increase in the likelihood of residing in the *Loving* states for the younger generation of *Loving*-born black males by spousal types, it is clear that the probability of residing in the *Loving* states for those with white spouses is always lower compared to those with black spouses regardless of the generation. This finding implies that involuntary repeal of state laws banning interracial marriage may not be enough to undo the effects of local culture and norms that are not favorable to interracial marriages.

The percentage of *Loving*-born black males residing in the *Loving* states across generations increased more for those with white spouses, yet a different picture emerges when we look at non-*Loving*-born black males. Contrary to what we observed for the *Loving*-born black males, the double-difference estimate for non-*Loving*-born black males is negative (-0.9 percentage points). The statistically significant triple-difference estimate of 4.8 percentage points implies that the 0.9 percentage point decrease in the proportion of non-*Loving*-born blacks males residing in



the *Loving* states is attributable to intergenerational changes in the attitude towards migration.

To test the robustness of the above results I focus on more recent census data sets. The younger generation consists of those who were 18 or younger as of 1967, who were thus 41 and 51 years of age or younger as of the 1990 and 2000 census enumerations respectively. The 1990 census sample shows that the double-difference estimate for *Loving*-born black males is positive yet statistically insignificant, suggesting that the percentage of *Loving*-born black males with white or black spouses residing in the *Loving* states across generations increased similarly. A negative and highly statistically significant double-difference estimate for non-*Loving*-born black males tells a different story. For non-*Loving*-born black males with white spouses the increase in percentage residing in the *Loving* states across generations is 3.1 percentage points short of the increase in the percentage of non-*Loving*-born black males with black spouses. As a result, the triple-difference estimate for black males calculated using the 1990 census data is very similar to the one calculated using the 1980 census data. The estimates based on the 2000 sample are very similar to the ones calculated from the 1980 sample. The triple-difference estimate of 6.9 percentage points for black males in the 2000 census data is highly statistically significant.

A comparison between the upper and the lower panels of Table 7 reveals that double- and triple-difference estimates for black females are similar to those of for black males, but in most cases large standard errors yield imprecisely estimated coefficients for black women.

Next, I account for other observable characteristics that may affect the likelihood of residing in the *Loving* states. If highly educated *Loving*-born black males are more likely to emigrate to the non-*Loving* states (to attend higher-education institutions or for better job opportunities) and are more likely to intermarry due to their higher educational attainment, then excluding the years of education may yield biased estimates. This study considers educational attainment rather than individual earnings or occupation because education is a highly reliable predictor of economic wellbeing in the long run and is a good proxy for future socioeconomic status at the time of marriage decision. In addition, Wong (2003a, b) finds that education is a more desirable spousal feature than earnings for black males.

It is also well documented that economic incentives have a large explanatory power in migration decisions. Localities with smaller differences between the economic wellbeing of blacks and whites may attract disproportionately more black immigrants compared to the other states and these smaller differences may positively affect the perception of blacks in the marriage markets. To address these issues, I include education and the ratio of black male/white male unemployment rates by state of residence in Eq. 3.

Previous research finds that there is an inverse relationship between group size and the interracial marriage probability, and this relationship is observed both in and outside of the South (for instance, see Kalmijn 1993; Qian 1999). Therefore, interracial marriage probability is expected to be lower for blacks in localities where the black population is larger. The group size is smaller in the non-*Loving* states, which may facilitate interactions between blacks and other races and may in turn increase their interracial marriage probability. Another destination state characteristic I

control for is the black female/black male sex ratio in the state of residence, which may also affect the interracial marriage probabilities of blacks.<sup>24</sup> I also use a probit model instead of using the LPM and then calculate the predicted probabilities of residing in the *Loving* states for black males and black females.

Table 8 presents the double- and triple-difference estimates using a LPM and a probit model for the extended specification, which controls for education, ratio of black/white unemployment rates, group size and sex ratio.<sup>25</sup> The left panel of Table 8 shows that after controlling for observables, the results of LPM are not affected. A comparison between the left and right panels of Table 8 reveals that the LPM and probit model generate similar results. The probit model in the extended specification generates triple-difference estimates that range from 5 to 7 percentage points for black males and 2 to 17 percentage points for black females. Unreported coefficient estimates for education are negative and highly statistically significant, implying that education and probability of residing in the *Loving* states are negatively related. The coefficients of the relative unemployment rate and group size are found to be positive and statistically significant. Black female/male sex ratio has negative and significant coefficient in all samples. In addition to controlling for relative unemployment rates, absolute levels of black and white unemployment rates were included in the unreported regressions. While the estimates for the main variables of interest did not change, the black unemployment rate is found to have a positive and white unemployment rate is found to have a negative coefficient.<sup>26</sup>

When interpreting the results, a caveat is necessary about the direction of causation between having a white spouse and a black individual's choice of destination state. The census data do not allow determination of whether a black person married before or after migration, which prevents determination of whether an individual married in their birth state or in the destination state. Several scenarios may have led to the final distribution of blacks in the destination states. First, prior to 1967 a black male who was born in the *Loving* states could have chosen to relocate to non-*Loving* states to marry his existing white partner. Second, and somewhat more likely scenario is that, a black male who was born in one of the *Loving* states could have chosen to relocate to non-*Loving* states for a more hospitable racial environment and/or better job prospects and could end up marrying a white woman because interracial marriage is perceived as less of a taboo in the non-*Loving* states even after these laws were struck down universally. These differences in perception seem plausible, because the non-*Loving* states either did not have any anti-miscegenation laws or voluntarily repealed those laws, while the *Loving* states were forced to strike down their

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<sup>24</sup>For instance, in a state with a lower sex ratio, black males may be more likely to intermarry due to limited availability of black females or vice versa.

<sup>25</sup>Variations in these three variables arise from state of residence, and they are calculated as the 1970 and 1980 census data averages for the 1980 sample, 1970, 1980 and 1990 averages for the 1990 sample, and 1970, 1980, 1990 and 2000 averages for the 2000 sample. To check the robustness of the results I repeated the estimation exercise by including these variables calculated using each of the 1970, 1980, 1990, and 2000 census data sets in all samples. The results are very similar to those reported in Table 8 and are available upon request.

<sup>26</sup>Regression results are available upon request.

**Table 8** Extended specification, percentage residing in the *Loving* states

	LPM		Probit	
	<i>Loving</i> born	Non- <i>Loving</i> born	<i>Loving</i> born	Non- <i>Loving</i> born
<b>Black male</b>				
1980 census				
<i>DD</i>	3.9 (1.9)	-1.4 (1.2)	4.8 (2.1)	-0.8 (1.7)
<i>DDD</i>		5.3 (2.3)		5.6 (2.7)
1990 census				
<i>DD</i>	2.7 (1.8)	-3.1 (1.5)	3.6 (2.1)	-2.9 (1.3)
<i>DDD</i>		5.8 (2.4)		6.5 (2.5)
2000 census				
<i>DD</i>	8.9 (1.9)	4.5 (1.9)	10.1 (2.4)	4.9 (1.2)
<i>DDD</i>		4.5 (2.7)		5.2 (2.7)
<b>Black female</b>				
1980 census				
<i>DD</i>	3.2 (3.7)	-3.4 (2.1)	4.5 (3.9)	-3.4 (2.2)
<i>DDD</i>		6.5 (4.2)		7.9 (4.5)
1990 census				
<i>DD</i>	8.1 (3.6)	-6.4 (2.7)	10.6 (4.2)	-6.1 (2.6)
<i>DDD</i>		14.4 (4.5)		16.7 (5.0)
2000 census				
<i>DD</i>	3.2 (2.6)	2.6 (2.7)	3.0 (4.1)	1.3 (1.9)
<i>DDD</i>		0.6 (3.7)		1.7 (4.5)

Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. The right panel shows the marginal effects coefficients after Probit model. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

anti-miscegenation laws by the U.S. Supreme Court. A longitudinal data set with the complete migration, dating and marriage history of individuals would be ideal. However, the census data set is preferred because only the census data set provides large enough samples to overcome potential issues due to low interracial marriage rates.

#### Same age groups from different censuses

Thus far I have focused on differential sorting of married blacks by comparing the predicted probability of residing in the *Loving* states for those of younger and older generations. A comparison of the predicted probability of residing in the *Loving* states for those individuals in different age groups may be an issue if migration behavior is a function of age.

To avoid this problem, I compare the likelihood of residing in the *Loving* states for the younger and older generations of individuals in the same age group who are drawn from different census years. More specifically, I calculate the probability of residing in the *Loving* states for those who are aged 32 to 51 as of the 1980 and 2000 census enumerations. Individuals who fall into this age interval are considered of younger generation as of the 2000 census enumeration and of older generation as of the 1980 census enumeration. Similarly, I also focus on those who are aged 32 to 41 as of the 1980 and 1990 census enumerations. Individuals who fall into this age interval are considered of younger generation as of the 1990 census enumeration and of older generation as of the 1980 census enumeration.

Table 9 presents the estimates for the basic and extended specifications calculated based on the sample of individuals aged 32–51 drawn from the 1980 and 2000 census samples and the estimates based on the sample of blacks aged 32–41 drawn from the 1980 and 1990 census samples.<sup>27</sup> The estimates for the black male sample in Table 9 are highly statistically significant and slightly larger than those in Table 8. This analysis suggests that the results are not affected when I focus on the younger and older generations of individuals in the same age group who are drawn from different census data sets.

#### Isolating the cost of migration

To avoid incarceration, Mildred and Richard Loving chose to migrate from Virginia to one of its neighbors, D.C. It is natural to think that distance moved should be directly related to both the monetary and psychological costs of migration. If *Loving*-born individuals decide to move to one of the non-*Loving* states to avoid their unfavorable environment, they may prefer to move to the closest state. To isolate the cost of migration, I restrict the sample to those who were born and are residing in one of the “border-states”, i.e. the *Loving* and

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<sup>27</sup>For the extended specification variations in the ratio of black/white unemployment rate, group size and sex ratio arise from state of residence, and they are calculated as the 1970 and 1980 census data averages for the older generation drawn from the 1980 sample; the 1970, 1980 and 1990 averages for the younger generation from the 1990 sample; and the 1970, 1980, 1990 and 2000 averages for the younger generation from the 2000 sample.

**Table 9** Comparing same age groups, percentage residing in the *Loving* states

	Basic		Extended	
	<i>Loving</i> born	Non- <i>Loving</i> born	<i>Loving</i> born	Non- <i>Loving</i> born
Black male				
1980 v. 2000 census <sup>a</sup>				
<i>DD</i>	11.1 (1.7)	-2.4 (1.2)	10.6 (1.5)	-3.5 (1.3)
<i>DDD</i>		13.6 (2.1)		14.1 (2.0)
1980 v. 1990 census <sup>b</sup>				
<i>DD</i>	5.0 (2.4)	-2.6 (1.6)	5.9 (2.2)	-2.8 (1.6)
<i>DDD</i>		7.6 (2.9)		8.7 (2.8)
Black female				
1980 v. 2000 census <sup>a</sup>				
<i>DD</i>	3.5 (2.7)	-1.1 (3.0)	6.1 (2.5)	-1.8 (2.7)
<i>DDD</i>		4.6 (4.0)		7.9 (3.6)
1980 v. 1990 census <sup>b</sup>				
<i>DD</i>	-0.24 (4.8)	-1.5 (2.7)	3.4 (4.4)	-1.8 (2.9)
<i>DDD</i>		1.3 (5.5)		5.2 (5.3)

<sup>a</sup>Younger in 2000 v. older in 1980, aged 31–51

<sup>b</sup>Younger in 1990 v. older in 1980, aged 31–41

Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. Unreported marginal effects coefficients after Probit model are similar. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

non-*Loving* states that are next to or otherwise close to each other, and repeat the analysis from Table 7. Once the cost of moving is isolated, I expect the double- and triple-difference estimates to be larger than those in Table 7.<sup>28</sup>

<sup>28</sup>The border-states sample includes nine *Loving* states (Texas, Oklahoma, Missouri, Kentucky, West Virginia, Virginia, Delaware, Arkansas, and Tennessee), ten non-*Loving* states (New Mexico, Colorado, Kansas, Nebraska, Iowa, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey), and D.C.

Estimates for the border-states sample are shown in Table 10. Compared to Table 7, the double- and triple-difference estimates for black males are much larger for the 1980 and 1990 samples, while the estimates are similar for the 2000 sample.<sup>29</sup> The results imply that for black males, isolating the cost of moving magnifies the relationship between the repeal of anti-miscegenation laws and differential sorting of married black males by spousal race. The lower panel of Table 10 shows that for black females, restricting the sample to the border states yields estimates that are similar to those of Table 7.

#### Duration of exposure to anti-miscegenation laws matters

The double- and triple-difference estimates in Tables 7–10 shed some light on the sorting of black individuals affected by anti-miscegenation laws into the *Loving* and non-*Loving* states relative to those not affected by those laws. So far, the empirical strategy compares individuals who turned 18 before and after the *Loving* decision in 1967. This approach may create issues if those who participate in interracial unions tend to marry older than the average black groom or bride. Specifically, based on the current younger/older generation classification, some individuals who are considered of the older generation may have married well after 1967.<sup>30</sup>

To address this issue, following Guryan (2004), I index individuals by the amount of time spent in the pre-*Loving* era. More specifically, I create a variable, “*Years*”, that is equal to the number of years exposed to the pre-*Loving* era. By this metric, a person who was 25 years old in the 1980 census enumeration was 12 years of age in 1967 or spent 12 years in the pre-*Loving* era. It is natural to think that the length of exposure to anti-miscegenation laws should have an impact on the sorting of black individuals. For instance, a *Loving*-born black individual who lived 20 years pre-*Loving* with a white spouse may be more likely to have moved and stayed out of the *Loving* states compared to an observationally equivalent person who only lived 10 years in the pre-*Loving* era. Or equally likely, a *Loving*-born black individual who lived 20 years pre-*Loving* may be more or less likely to have moved and stayed out of the *Loving* states and ended up marrying a white person in the non-*Loving* states compared to an observationally equivalent person who only lived 10 years in the pre-*Loving* era. In addition, substituting the indicator variable for being of the younger generation with the *Years* variable allows us to study the impact of the repeal of anti-miscegenation laws in a more continuous fashion and to measure changing culture and social norms over time. I estimate the following model:

$$\begin{aligned} \text{Loving}_i = & \alpha_0 + \alpha_1 \text{Years}_i + \alpha_2 W_i + \alpha_3 L_i + \alpha_4 \text{Years}_i W_i \\ & + \alpha_5 \text{Years}_i L_i + \alpha_6 W_i L_i + \alpha_7 \text{Years}_i W_i L_i + X_i' \beta + \epsilon_i, \end{aligned} \quad (4)$$

<sup>29</sup>In 1980 the younger generation of *Loving*-born black males with white and black spouses are 20.5 to 11 percentage points more likely to reside in one of the *Loving* states compared to those of the older generation. This gap yields a double-difference estimate of 9.5 percentage points, more than twice as large as that of Table 7.

<sup>30</sup>In addition, Table 5 shows that the majority of first marriages occurred after 1967 for those who turned 18 after 1967; however, the sample of married blacks used in this analysis also includes those who were married twice or more.

**Table 10** Border states sample, percentage residing in the *Loving* states

		<i>Loving</i> born		Non- <i>Loving</i> born	
		White wife	Black wife	White wife	Black wife
Black male ( <i>n</i> = 39,060)	1980 census Older	59.5	77.6	8.8	6.1
	Younger	80.0	88.6	8.5	8.6
	<i>D</i>	20.5	11.0	-0.3	2.5
	<i>DD</i>	9.5 (3.6)		-2.8 (2.2)	
	<i>DDD</i>		12.3 (4.2)		
	1990 census Older	64.3	79.3	11.6	8.2
	Younger	81.0	90.3	13.0	12.2
	<i>D</i>	16.7	11.0	1.4	4.0
	<i>DD</i>	5.7 (3.7)		-2.6 (2.6)	
	<i>DDD</i>		8.3 (4.5)		
2000 census ( <i>n</i> = 36,311)	Older	64.5	82.0	11.2	9.5
	Younger	82.2	91.6	15.6	12.4
	<i>D</i>	17.7	9.6	4.3	2.9
	<i>DD</i>	8.1 (4.3)		1.4 (3.3)	
	<i>DDD</i>		6.6 (5.4)		
Black female ( <i>n</i> = 42,266)	1980 census Older	65.2	77.6	9.0	5.8
	Younger	78.5	88.5	6.9	7.2
	<i>D</i>	13.3	10.9	-2.1	1.4
	<i>DD</i>	2.4 (6.9)		-3.5 (4.0)	
	<i>DDD</i>		5.9 (7.9)		
	1990 census Older	64.7	79.8	13.4	6.3
	Younger	79.8	90.6	12.3	10.5
	<i>D</i>	15.1	10.8	-1.1	4.1
	<i>DD</i>	4.3 (7.9)		-5.2 (5.0)	
	<i>DDD</i>		9.6 (9.3)		
		White husband	Black husband	White husband	Black husband

**Table 10** (continued)

		<i>Loving</i> born		Non- <i>Loving</i> born	
2000 census ( <i>n</i> =37,228)	Older	80.4	83.4	9.5	9.6
	Younger	80.8	91.9	16.1	12.1
	<i>D</i>	0.4	8.5	6.5	2.5
	<i>DD</i>		-8.1 (4.8)		4.0 (5.0)
	<i>DDD</i>			-12.1 (6.9)	

The younger generation consists of those who were 18 or younger as of 1967, who were thus 31, 41 and 51 years of age or younger as of the 1980, 1990 and 2000 census enumerations respectively. The older generation consists of those who were older than 31, 41 and 51 as of the 1980, 1990 and 2000 census enumerations respectively. Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. Unreported marginal effects coefficients after Probit model are similar. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

where *Years<sub>i</sub>* is a continuous variable for the number of years lived in the pre-*Loving* era and all other variables are defined previously. Table 11 shows that *Loving*-born black individuals who have black spouses and who were not exposed to the pre-1967 era are 50 to 60 percentage points more likely to reside in the *Loving* states compared to those who were born in non-*Loving* states. In addition, those *Loving*-born interracial married black males and black females who were not at all exposed to the pre-*Loving* era are 20 and 12 percentage points less likely to reside in the *Loving* states, respectively, than those *Loving*-born individuals with black spouses in 1980. Interestingly, the statistically significant negative impact of having a white spouse on the probability of residing in the *Loving* states becomes gradually smaller in magnitude in the 1990 and 2000 samples for both black males and females.

The coefficient estimates for the main variable of interest, the triple interaction term for being born in the *Loving* states, having a white spouse and years exposed to the pre-1967 era, is negative and highly statistically significant in all census samples for both black males and females. Strikingly, each additional year exposed to the pre-*Loving* era for those *Loving* born blacks with white spouses decreases their probability of residing in the *Loving* states by 0.2 to 0.4 percentage points for black males and by 0.4 to 0.8 percentage points for black females.

#### Divorce rates, divorce reforms and residential segregation

To avoid possible selectivity issues that may arise from mortality and duration of marriages, the older generation of married blacks is restricted to individuals at most 60 years of age.<sup>31</sup> To ensure the robustness of the results, I repeat the estimation

<sup>31</sup>According to National Health Statistics Reports, life expectancy at birth is 63 for black males in the 1980s (Arias 2002).



**Table 11** Exposure to anti-miscegenation statutes, probability of residing in the *Loving* states

	Black male			Black female		
	1980	1990	2000	1980	1990	2000
White spouse	-.001 (.014)	-.018 (.013)	.025 (.008)	-.043 (.022)	-.052 (.021)	-.0195 (.010)
Years exposed to pre-1967	-.003 (.0001)	-.004 (.0002)	-.003 (.0002)	-.002 (.0001)	-.004 (.0002)	-.003 (.0002)
Born in <i>Loving</i>	.590 (.006)	.509 (.006)	.488 (.004)	.597 (.005)	.526 (.005)	.489 (.003)
Years exposed to pre-1967 × Born in <i>Loving</i>	-.004 (.0002)	-.003 (.0002)	-.004 (.0003)	-.004 (.0002)	-.003 (.0002)	-.003 (.0002)
Years exposed to pre-1967 × White spouse	.0005 (.0005)	.002 (.0007)	-.002 (.0007)	.002 (.0009)	.003 (.001)	.0009 (.001)
Born in <i>Loving</i> × White spouse	-.198 (.027)	-.088 (.021)	-.079 (.012)	-.116 (.047)	-.045 (.034)	-.046 (.016)
Years exposed to pre-1967 × Born in <i>Loving</i> × White spouse	-.002 (.001)	-.004 (.001)	-.003 (.001)	-.004 (.002)	-.008 (.002)	-.006 (.001)
Education	-.012 (.0003)	-.003 (.0003)	-.001 (.0004)	-.013 (.0004)	-.002 (.0003)	-.004 (.0003)
Sex ratio	-.286 (.022)	.349 (.031)	.677 (.029)	-.354 (.023)	.228 (.032)	.574 (.017)
Group size	1.85 (.286)	2.41 (.301)	2.76 (.024)	1.79 (.0273)	2.34 (.028)	.274 (.001)
Relative unemployment rate	-.117 (.003)	-.310 (.005)	-.409 (.004)	-.120 (.004)	-.315 (.005)	-.438 (.003)
Number of observations	130201	107347	117384	136653	111993	120171
R-squared	.35	.45	.55	.36	.46	.55

Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. Unreported marginal effects coefficients after Probit model are similar. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

exercise by further restricting the older generation to individuals at most 51 years of age whenever the data permit.<sup>32</sup>

<sup>32</sup>This robustness check is not viable for the 2000 census sample, because restricting the sample to those aged 18–51 would wipe out the older generation in the 2000 sample. Unreported results show that when the samples are restricted to those aged 18–51, in most cases, the double- and triple-difference estimates are slightly larger than those in Tables 7 and 8 and they are not affected in terms of statistical significance.

Selection may be an issue if black/white marriages are more fragile among the couples currently residing in the *Loving* states. If interracial marriages are more delicate among residents of the *Loving* states, I expect the estimates for probability of residing in the *Loving* states for black males with white spouses to be downward biased. However, the double-difference estimates should not change much as long as the impact is similar across generations.

To ensure the robustness, I account for differences across states in laws that could affect marriage patterns and divorce rates. The left panel of Table 12 replicates the extended specification of Table 8 after controlling for divorce rates in the state of residence.<sup>33</sup> The divorce rates for the 1980, 1990, and 2000 samples are calculated by taking averages of the past 10 years of divorce rates in the state of residence provided by Friedberg (1998).<sup>34</sup> The correlation between average divorce rates across time is found to be very high, ranging from 0.86 to 0.96.<sup>35</sup> Table 12 shows that inclusion of average divorce rates in the state of residence slightly decreases double- and triple-difference estimates but the t-statistics barely change in most cases. Unreported results show that average divorce rates have positive and highly statistically significant coefficients (with t-statistics ranging from 33 to 121) in all census samples.

I also control for different divorce laws across states to account for possible sample selection due to duration of marriages. In 1969, California became the first state to create unilateral divorce, which made possible for a married person to dissolve their marriage without the consent of their spouse. After California's lead, 31 states adopted unilateral divorce laws. I follow Friedberg's (1998) coding of state divorce regimes and include a dummy variable indicating whether the state was a reform state. The middle panel of Table 12 replicates Table 8 after adding a dummy for a reform state. The double- and triple-difference estimates are slightly smaller for black men but almost identical to those in Table 8 for black women.

Residential segregation, especially in the 1970s and 1980s, is found to have strong adverse effects on labor market and social outcomes of blacks relative to whites (Collins and Margo 2000). I expect the level of residential segregation to be negatively related to the various aspects of interracial relationships, particularly interracial marriage patterns in a locality. I use the dissimilarity index calculated by the U.S. Census Bureau using the 1980, 1990, and 2000 census data sets. The dissimilarity index measures the percentage of the black population that would have to change residence for each neighborhood to have the same percentage of blacks as the geographical area overall.<sup>36</sup> The index ranges from 0 (complete integration) to 1

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<sup>33</sup>I use overall divorce rate in state of residence. Recent research by Fu and Wolfinger (2011) finds no evidence that crossing a black/white racial boundary increases the divorce rates.

<sup>34</sup>With the exception of 2000. The divorce rates for 2000 are calculated by taking the average divorce rates from 1990 to 1998.

<sup>35</sup>The correlations between average divorce rates are available upon request.

<sup>36</sup>See [http://www.census.gov/hhes/www/housing/resseg/excel\\_msa.html](http://www.census.gov/hhes/www/housing/resseg/excel_msa.html) for more information on various segregation indexes.

**Table 12** Divorce laws, divorce rates, and residential dissimilarity: extended specification, percentage residing in the *Loving* states

	Divorce rates		Divorce laws		Dissimilarity index	
	<i>Loving</i> born	Non- <i>Loving</i> born	<i>Loving</i> born	Non- <i>Loving</i> born	<i>Loving</i> born	Non- <i>Loving</i> born
<b>Black male</b>						
1980 census						
<i>DD</i>	3.8 (1.8)	0.2 (1.3)	3.7 (1.8)	-0.6 (1.2)	3.9 (1.9)	-1.6 (1.3)
<i>DDD</i>		3.6 (2.2)		4.3 (2.2)		5.5 (2.3)
1990 census						
<i>DD</i>	2.3 (1.7)	-2.6 (1.5)	3.1 (1.8)	-3.0 (1.4)	2.8 (1.7)	-2.4 (1.5)
<i>DDD</i>		5.0 (2.2)		6.1 (2.3)		5.2 (2.2)
2000 census						
<i>DD</i>	6.7 (1.5)	1.0 (1.6)	8.7 (1.8)	3.7 (1.7)	6.8 (1.6)	4.4 (1.7)
<i>DDD</i>		5.6 (2.2)		5.0 (2.5)		2.4 (2.3)
<b>Black female</b>						
1980 census						
<i>DD</i>	2.4 (3.5)	-3.1 (2.1)	3.3 (3.6)	-3.2 (2.1)	3.2 (3.7)	-2.3 (2.3)
<i>DDD</i>		5.5 (4.1)		6.5 (4.1)		5.4 (4.3)
1990 census						
<i>DD</i>	6.5 (3.1)	-6.0 (2.5)	8.0 (3.6)	-6.1 (2.7)	5.6 (3.3)	-3.7 (2.7)
<i>DDD</i>		12.6 (4.0)		14.1 (4.5)		9.3 (4.2)
2000 census						
<i>DD</i>	0.7 (2.6)	0.2 (2.2)	3.2 (3.2)	2.6 (2.7)	2.2 (2.9)	0.7 (2.8)
<i>DDD</i>		0.5 (3.4)		0.5 (4.2)		1.5 (4.1)

Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. Unreported marginal effects coefficients after Probit model are similar. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

(complete segregation). While the dissimilarity index varies from census to census, I find that pairwise correlations between these indexes are at least 0.92.<sup>37</sup> The right panel of Table 12 shows the estimates when I include the dissimilarity index in the set of cofactors. Again, the results are similar to those in the extended specification of Table 8.

#### Migration patterns within the *Loving* and non-*Loving* states

The main empirical strategy so far has focused on the migration patterns of *Loving*- and non-*Loving* born individuals between those two state groups. It is important to study the behavior of movers within the *Loving* and non-*Loving* states because this kind of mobility is less likely to be associated with institutional differences in miscegenation laws. I expect movers within *Loving* and non-*Loving* states to have similar patterns across spousal races and generations. Table 13 shows the probability of staying in the birth state for the sample of individuals who stayed in their birth state or moved within their state group of birth (*Loving* and non-*Loving* states). Those who moved out of their state group of birth, either from *Loving* to non-*Loving* or from non-*Loving* to *Loving* are excluded from the analysis. In the 1980 sample, the younger generation of black males with white spouses are 7.7 percentage points more likely to reside in their birth states compared to the older generation of black males with white spouses. The younger generation of black males with black spouses are 4.2 percentage points more likely to reside in their birth states compared to the older generation of black males with black spouses. As a result, we get a double-difference estimate of 3.5 percentage points, which is not statistically significant at the conventional levels. As expected, the gap of probability of residing in the birth state for *Loving*-born black males and females is not statistically different across generations and spousal race in all samples with the exception of the 1990 black male sample. Also, the corresponding triple-difference estimates are found not to be statistically significant at the conventional levels.

#### Breaking the *Loving* and non-*Loving* dichotomy

So far the focus has been on the sorting of married black individuals among the *Loving* and non-*Loving* states. The *Loving* states are somewhat more homogeneous in the sense that they were all forced to repeal their anti-miscegenation statutes, while the non-*Loving* states can be further divided into three distinct subgroups: “Never illegal” states, “Nineteenth-century legalized” states, and “1948–1967 Legalized” states. A natural exercise is to consider each of these three state groups separately instead of lumping them together in one category.

Table 14 shows estimates of the probability of residing in the *Loving* states for those who were born in the *Loving* states by spousal race and generation and compares them with those who were born in the three categories of non-*Loving* states. The estimates for the *Loving*-born black individuals are identical to those in Table 7.

<sup>37</sup>The data on pairwise correlations between dissimilarity indexes are available upon request.

**Table 13** Mobility within *Loving* and non-*Loving* states: percentage residing in the state of birth

		<i>Loving</i> born		Non- <i>Loving</i> born		
Black male		White wife	Black wife	White wife	Black wife	
	1980 census	Older	63.7	78.4	57.5	74.9
		Younger	71.5	82.5	66.3	81.1
		<i>D</i>	7.7	4.2	8.8	6.2
		<i>DD</i>		3.5 (3.2)		2.6 (2.4)
		<i>DDD</i>			1.0 (4.0)	
	1990 census	Older	59.0	77.6	56.8	76.2
		Younger	69.6	80.2	60.6	79.4
		<i>D</i>	10.7	2.6	3.8	3.2
		<i>DD</i>		8.0 (3.1)		0.7 (2.6)
		<i>DDD</i>			7.4 (4.1)	
	2000 census	Older	65.3	79.2	50.5	75.4
		Younger	70.9	81.0	63.1	80.6
		<i>D</i>	5.7	1.8	12.6	5.2
		<i>DD</i>		3.9 (3.0)		7.4 (2.8)
<i>DDD</i>				-3.5 (4.1)		
Black female		White husband	Black husband	White husband	Black husband	
	1980 census	Older	68.1	80.3	64.8	76.6
		Younger	72.1	83.4	72.4	81.6
		<i>D</i>	4.0	3.1	7.6	5.1
		<i>DD</i>		0.9 (5.5)		2.5 (4.0)
		<i>DDD</i>			-1.6 (6.8)	
	1990 census	Older	63.0	78.9	53.3	77.3
		Younger	68.3	81.4	66.3	80.3
		<i>D</i>	5.3	2.6	13.0	3.0
		<i>DD</i>		2.8 (6.1)		9.9 (4.5)
		<i>DDD</i>			-7.2 (7.6)	

**Table 13** (continued)

		<i>Loving</i> born		Non- <i>Loving</i> born	
2000 census	Older	70.1	79.6	57.9	77.1
	Younger	69.2	81.9	63.5	80.7
	<i>D</i>	−0.9	2.3	5.7	3.6
	<i>DD</i>		−3.2 (5.2)		2.1 (4.4)
	<i>DDD</i>			−5.3 (6.8)	

The younger generation consists of those who were 18 or younger as of 1967, who were thus 31, 41 and 51 years of age or younger as of the 1980, 1990 and 2000 census enumerations respectively. The older generation consists of those who were older than 31, 41 and 51 as of the 1980, 1990 and 2000 census enumerations respectively. Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. Unreported marginal effects coefficients after Probit model are similar. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

For black individuals who were born in the Never illegal states, the gap of percentage residing in the *Loving* states between the younger and older generation is smaller for those married to white spouses than for black individuals with black spouses in five out of six samples. As a result, the triple-difference estimates are larger than the double-difference estimates when the control group consists of those who were born in the Never illegal states.<sup>38</sup>

In the sample of black individuals who were born in one of the Nineteenth-century legalized states, none of the double-difference estimates are statistically significant at conventional levels and the triple-difference estimate is only statistically significant for black males in the 2000 census sample. Similarly, when the control group is the 1948–1967 Legalized state group, the only statistically significant triple-difference estimate is for the black males in the 1980 census sample.

Comparing Tables 7 and 14, it is clear that the double-difference estimates for the non-*Loving* born sample in Table 7 are mostly driven by black individuals who were born in the Never illegal states. Given that interracial marriage was never illegal in these states, this result is not surprising because crossing racial lines must have been considered less of a taboo in Never illegal states than in the Nineteenth-century legalized, 1948–1967 Legalized, and *Loving* states.

<sup>38</sup>The triple-difference estimates are highly statistically significant in five out of six cases.

**Table 14** Percentage residing in the *Loving* states: three categories of non-*Loving* states

	<i>Loving</i> born		Never illegal		19th century legalized		1948–1967 legalized	
	White	Black	White	Black	White	Black	White	Black
<b>Black male</b>								
1980 census								
Older	27.8	62.2	5.3	9.3	6.1	8.4	6.1	8.5
Younger	49.1	79.6	9.5	17.1	10.9	11.2	4.7	10.6
<i>D</i>	21.3	17.4	4.2	7.8	4.8	2.8	-1.4	2.1
<i>DD</i>		3.9		-3.6		2.0		-3.4
		(2.1)		(2.4)		(1.9)		(2.5)
<i>DDD</i>				7.5		1.9		7.3
				(3.2)		(2.8)		(3.3)
1990 census								
Older	35.9	64.5	12.9	14.7	6.9	10.4	7.5	10.0
Younger	55.3	81.7	15.7	23.5	10.9	16.2	8.6	12.2
<i>D</i>	19.4	17.2	2.8	8.8	4.0	5.8	1.1	2.2
<i>DD</i>		2.1		-6.0		-1.8		-1.0
		(2.1)		(3.0)		(1.8)		(3.2)
<i>DDD</i>				8.1		3.9		3.2
				(3.7)		(2.8)		(3.8)
2000 census								
Older	41.3	69.4	14.1	20.9	8.3	13.2	4.8	13.5
Younger	65.8	85.9	23.3	29.3	15.3	18.5	12.9	16.4
<i>D</i>	24.5	16.4	9.1	8.4	7.0	5.3	8.2	2.9
<i>DD</i>		8.1		0.8		1.7		5.3
		(2.3)		(3.7)		(2.3)		(3.1)
<i>DDD</i>				7.3		6.4		2.8
				(4.4)		(3.3)		(3.9)
<b>Black female</b>								
1980 census								
Older	36.6	62.7	8.4	9.0	6.4	7.2	5.8	8.8
Younger	54.6	79.6	10.6	14.9	7.9	9.9	3.7	10.8
<i>D</i>	18.0	16.9	2.2	5.9	1.5	2.8	-2.1	2.0
<i>DD</i>		1.1		-3.7		-1.3		-4.1
		(4.0)		(4.1)		(3.2)		(4.0)
<i>DDD</i>				4.8		2.5		5.2
				(5.8)		(5.1)		(5.6)

**Table 14** (continued)

	<i>Loving</i> born		Never illegal		19th century legalized		1948–1967 legalized	
	White	Black	White	Black	White	Black	White	Black
1990 census								
Older	34.9	64.0	11.9	12.0	11.4	8.7	9.2	7.3
Younger	57.2	82.4	13.2	21.5	14.6	15.3	7.9	12.1
<i>D</i>	22.4	18.4	1.3	9.5	3.1	6.6	−1.3	4.8
<i>DD</i>		4.0		−8.1		−3.5		−6.1
		(3.9)		(4.7)		(4.1)		(6.6)
<i>DDD</i>				12.1		7.5		10.1
				(6.1)		(5.6)		(7.6)
2000 census								
Older	47.5	71.1	22.2	23.0	11.1	12.6	2.9	12.2
Younger	67.6	87.2	21.7	30.2	17.4	18.8	13.1	16.1
<i>D</i>	20.1	16.2	−0.5	7.2	6.3	6.2	10.3	3.9
<i>DD</i>		3.9		−7.7		0.2		6.4
		(3.0)		(5.5)		(4.7)		(6.8)
<i>DDD</i>				11.6		3.8		−2.5
				(6.3)		(5.6)		(7.5)

The younger generation consists of those who were 18 or younger as of 1967, who were thus 31, 41 and 51 years of age or younger as of the 1980, 1990 and 2000 census enumerations respectively. The older generation consists of those who were older than 31, 41 and 51 as of the 1980, 1990 and 2000 census enumerations respectively. Standard errors are given in parentheses along with the coefficients, which are estimated using LPM. The linearized standard errors are derived from a consistent variance-covariance matrix using Huber-White sandwich estimators. Unreported marginal effects coefficients after Probit model are similar. All the numbers are rounded independently. U.S. census person weights are used in estimations, but unweighted estimates are similar

## Conclusion

Based on their treatment of interracial marriages, there are four groups of states in the U.S.: 10 Never illegal states, 11 Nineteenth-century legalized states, 14 1948–1967 Legalized states, and 16 *Loving* states where anti-miscegenation laws remained effective until the U.S. Supreme Court decision in 1967 forced their ban. The U.S. Supreme court ruling provides a unique opportunity to study the impact of an exogenous change in a state's laws regulating marriages to understand whether the geographical distribution of black Americans into the *Loving* and non-*Loving* states differed by spousal race.

I calculate the probability of residing in the *Loving* states by spousal race for those younger individuals who were more likely to marry after 1967 and were not likely to be legally affected by anti-miscegenation laws, and compare these with corresponding differences for older individuals who were likely to be affected by these laws. Within each spousal race group, the younger generation of black individuals is more



likely to reside in the *Loving* states compared to the older-generation of black individuals. Among the *Loving*-born black males, the percentage increase in the probability of residing in the *Loving* states across generations is much larger for those with white spouses than for those with black spouses. For black females, there is no strong evidence for differential geographical sorting by generation and spousal race. Nevertheless, when a continuous variable that measures the exposure to the pre-1967 era is included, I find that the length of exposure to anti-miscegenation laws affected the geographical sorting of both black males and black females. The results are robust to controls for various cofactors and consideration of alternative specifications.

While the percentage increase in the probability of residing in the *Loving* states across generations for *Loving*-born black individuals with white spouses is larger than for those with black spouses, the probability of residing in the *Loving* states for interracial married blacks has not reached the levels of those with black spouses even since the ban ended. With the U.S. Supreme Court ruling, interracial marriage became legal in every jurisdiction in the U.S., but it is apparent from the analysis that social norms and local culture have changed slowly even since the Civil Rights Movement. The repeal of anti-miscegenation laws matters to the geographical distribution of married black Americans differentially by spousal race, but I find that unless society is ready to change, the government cannot fully offset the negative impact of past bans and punishments.

While laws banning interracial marriage became history after Alabama repealed the anti-miscegenation law remaining in its constitution in 2000 (with 41 % opposition from its residents), laws banning marriages between same-sex couples are being heavily debated in the U.S. Same-sex marriage has been legalized in D.C. and 13 states: California, Connecticut, Delaware, Iowa, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New York, Rhode Island, Vermont and Washington. A few states grant rights similar to marriage and some grant limited or enumerated rights to same-sex couples. The Defense of Marriage Act (DOMA) was enacted in 1996 and Section 3 of DOMA prevented the federal government from recognizing same-sex married couples as spouses for federal purposes. In the case of *United States v. Windsor*, Section 3 of DOMA was ruled unconstitutional by the U.S. Supreme Court on the basis of its violation of the Fifth Amendment on June 26, 2013. While the federal government recognizes same-sex married couples as spouses, the majority of states have statutes and constitutions banning same-sex marriages and unions and many states do not recognize same-sex marriages performed in other jurisdictions.

A high percentage of lesbian and gay adults expressed their strong preference for those states where same-sex marriage is legal. Recent estimates of the gay and lesbian population are around 2–10 % of the total U.S. population (see Gates 2011; Smith and Gates 2001). According to a recent online survey, a striking 78 % of lesbian and gay adults said that, *ceteris paribus*, they would prefer a job with an employer in a state where same-sex marriages are recognized over one in a state that does not recognize same-sex marriages.<sup>39</sup> Compared to the 1990 census when

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<sup>39</sup>Based on a survey that was conducted by Harris Interactive and Witeck-Combs Communications (see Witeck 2011).

gay and lesbian couples reported living in 52 % of all counties, in the 2000 census, gay and lesbian couples and families lived in 99.3 % of all counties in the U.S. Nevertheless, same-sex couples are concentrated heavily in a handful of localities.<sup>40</sup> Previous research finds that interracial couples and same-sex couples are very similar in terms of their geographical mobility (Rosenfeld and Byung-Soo 2005). In addition, Johnson (2009) underlines that the arguments made in defense of the bans on interracial marriage are very similar to those arguments made in defense of preserving bans on same-sex marriage. The author suggests that the repeal of interracial marriage bans in 1967 may provide insight on the legal future of same-sex marriages. Studying the relationship between the anti-miscegenation laws and the geographical distribution of interracial couples may help us to understand and predict the future geographical distribution of same-sex couples in the U.S.

The classification and punishment of the “crime” of interracial marriage varied among the 41 states that banned interracial marriage. Eleven states that repealed these laws in the nineteenth century did not categorize interracial marriage as misdemeanor or felony but imposed severe punishment.<sup>41</sup> Of the remaining states, 17 categorized the crime as a felony, ten categorized it as a misdemeanor and three categorized interracial marriages as null. Future work might involve examination of the variation in punishment for the crime of interracial marriage, and it will expand our limited knowledge on the delicate history of black and white interracial relationships.

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<sup>40</sup>See Gates (2011). The top ten states with the highest percentage of coupled households (married and unmarried) that are gay and lesbian are the District of Columbia, California, Vermont, Massachusetts, New York, Washington, New Mexico, Nevada, Florida, Oregon, Georgia and Rhode Island.

<sup>41</sup>These states punished the offenders by whipping in puritan days or by sentencing them to life terms in antebellum days.

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