Eastern Economic Journal, **2010**, **36**, (500–522)

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The Influence of a Change in Immigration Law on US Marriage Rates

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This article analyzes how a change in immigration law can affect the marriage behavior of immigrants. The Legal Immigration and Family Equity (LIFE) Act of 2000 provided a 4-month period in which certain undocumented immigrants could complete the legalization process without having to return to their countries of origin. Marriage to a US citizen or legal immigrant is one way undocumented immigrants can qualify for the immigration benefit provided by the LIFE Act of 2000. Examining marriage behavior before, during, and after the law change indicates that the immigration law change affected the marital decisions of immigrants.
Eastern Economic Journal (2010) **36,** 500–522. doi:10.1057/eej.2009.28

Keywords: marriage; marriage rates; immigration laws

JEL: J12; J18

> ''Marisol, 24, an undocumented immigrant who has lived in Washington for eight years and did not want to give her last name, was among those seeking an application at the INS office in Arlington, VA, on Tuesday. 'This is going to give us the opportunity to be residents here and not have to leave our children,' she said as she held her squirming toddler.'' *The Dallas Morning News*, April 28, 2001. ''Deadline nears for undocumented immigrants, INS offices flooded as window on applying for visas ends Monday'' by Suzanne Gamboa.

INTRODUCTION

Gary Becker's marriage model suggests that individuals choose to marry when the utility associated with being married exceeds the utility when single [Becker 1973; 1974]. Empirical evidence on this theory confirms that individuals respond to economic incentives when considering the decisions of whether to marry and when to marry [Alm et al. 1999; Brien et al. 2004]. Most of the literature in this area, including Alm and Whittington [1995], Dickert-Conlin and Houser [2002], and Sjoquist and Walker [1995] focused on the income tax system or welfare programs, and use yearly time-series variation. An exception is Brien et al. [2004]. The authors examined an age restriction for remarriage in the US social security system and found that individuals respond to economic incentives for marriage. Like changes in the income tax system, welfare programs, and social security rules changes in immigration laws also affect marriage patterns. Jasso and Rosenzweig [1990] documented the correlation between immigration law changes and the number of immigrant spouses in the United States, with emphasis on the imposition of numerical limits on the availability of immigrant visas.

In this article, I focus on whether an immigration law change affected the marriage behavior of undocumented immigrants residing in the United States. Unlike previous studies where the duration of the legislation changes examined is at least 1 year [Alm and Whittington 1995; Sjoquist and Walker 1995; and Dickert-Conlin and Houser 2002], I examine a change in legislation (a change in an immigration law), which was in effect for a shorter period of time (4.4 months) at the beginning of the year. Therefore, marriages in this shorter period of time were less likely to be correlated with trends and other policy changes throughout the year, such as any change in the income tax system or welfare programs that create a marriage tax or subsidy. Previous research has also examined the relationship between immigration law changes and marriages [Jasso and Rosenzweig 1990], but has not narrowed the population to undocumented immigrants residing in the United States. In sum, the analysis is new in that it focuses specifically on undocumented immigrants and examines a legislation change that was in effect for a short period of time.

On December 21, 2000, the Legal Immigration and Family Equity Act of 2000 (henceforth referred to as the LIFE Act) was put into effect. This law provided a small window of opportunity, from December 21, 2000 to April 30, 2001, for certain qualified undocumented immigrants to complete the process of becoming legal immigrants without having to leave the United States. Before this law change, undocumented immigrants who were ineligible for completing the process of becoming legal residents in the United States had to go to an American consulate in their home countries to complete the process. Returning to their home countries is costly because most undocumented immigrants have acquired unlawful presence in the United States, and if they leave at anytime, they are barred from re-entering the United States for anywhere from 3 to 10 years. This has dissuaded many undocumented immigrants from obtaining legal status. They accept the risk of remaining in the United States illegally rather than possibly being separated from their family, friends, and employment for years. Therefore, for many qualified undocumented immigrants, the LIFE Act reduced the cost of obtaining legal status by not requiring them to return to their home countries to later encounter the entry restrictions.

Marriage to US citizens or legal permanent residents is one way undocumented immigrants can qualify for the immigration benefit provided by the LIFE Act. Therefore, the LIFE Act should influence marital patterns. The identification in this empirical analysis comes from comparing marriage patterns before, during, and after the immigration law change using monthly marriage rates and county monthly marriage counts. The source of variation in marriage counts arose from the differences in the cost of obtaining legal status, which changed when the LIFE Act was put into effect.

Using variations in US monthly marriage rates, the results indicate that while the LIFE Act was in effect, the national monthly marriage rate for this period was unaffected. The size of immigrant populations across both states and counties differ. Thus, in addition to using time-series variation, the analysis uses variations in the size of immigrant populations across counties. I use this additional variation to analyze the marriage propensity of residents in small and large immigrant population counties before, during, and after the immigration law change. Data from three of the top six "immigrant-receiving" states are examined. Using monthly county marriage data for New York, Florida, and New Jersey from 1999 to 2005, and employing a difference-in-differences methodology, the results indicate that

when the LIFE Act was in effect the relative percent increase in marriages was approximately 59 percent. The results also indicate that in a period of 6 months before and after the LIFE Act was in effect, the number of marriages decreased by approximately 10 and 21 percent, respectively. Thus, the results suggest that the immigration law change not only affected the timing of marriage for some undocumented immigrants but produced relatively large temporal effects.

Apart from theoretical interests, this article will contribute to the ongoing debate concerning undocumented immigrants and their future documented status. The article contributes to the debate by informing policymakers of the immediate effects of their immigration policies. The shifting of the timing of their marriages to within the window of opportunity and the approximately 34 percent increase in applications to become permanent residents from within the United States in 2001 suggest that the immigration policy has the ability to increase the number of documented immigrants.[1] Also, since the results suggest that the LIFE Act had positive effects on marriage counts, and to the extent that some of the increase in marriages are between undocumented immigrants and citizens or legal residents that would not have married otherwise, the immigration policy has the ability to increase the number of documented immigrants as well as change the family structure.

Organization of the article is as follows. Section 2 describes relevant institutional details about changing residence status and the immigration law under consideration. Section 3 reviews the relevant existing literature. Section 4 provides evidence from national monthly marriage rates and county monthly marriage counts that individuals respond to economic incentives when considering the decisions of whether to marry and when to marry. Section 5 is the conclusion.

INSTITUTIONAL DETAILS

Immigration through marriage for undocumented immigrants

Undocumented immigrants, also referred to as unauthorized or illegal immigrants, are foreign citizens illegally residing in the United States. The US Department of Homeland Security estimated that the total unauthorized immigrant population residing in the United States in 2000 was 8.5 million [Hoefer et al. 2008]. They include both those who entered without inspection (EWI) and those who entered and were inspected and then violated the terms of a temporary admission without having gained either permanent resident status or temporary protection from removal (status violators or overstayers). An example of an EWI is someone who has snuck across the US border. An example of a status violator is someone who was legally admitted into the country on a valid visa, but the visa has now expired. The Immigration and Naturalization Services (INS) estimated that in 2000, 33 percent of the undocumented population were overstayers and 67 percent were EWIs [US Department of Homeland Security 2003].

The US legal immigration system has three categories for admitting lawful permanent residents. The categories are immigration through family admissions, immigration through skilled admissions, and immigration through refugee and humanitarian admissions. Family-based admissions include family members, such as spouses, children (regardless of age or marital status), parents, and siblings of US citizens, and spouses and minor children of lawful permanent residents.[2] Under family-based admissions, priority is given to spouses. They are not constrained by

the visa quota system. The routes to legal residence status for undocumented immigrants are through marriage and employment, with marriage being the more common route. Hence, in this article, I focus on the route through marriage.

Marrying a US citizen or legal permanent resident qualifies one for legal residence status in the United States. Undocumented immigrants wishing to become lawful permanent residents by marrying US citizens and permanent residents typically follow one of the two paths depending on how they entered the United States and the type of visa violations he or she has incurred. For EWIs who are spouses of US citizens and permanent residents, the process of obtaining legal residence status almost always involves a trip to his or her home country. For overstayers who are spouses of US citizens and permanent residents, the process of obtaining legal residence status normally does not involve a trip to his or her home country. The process of changing residence status to lawful permanent residence without leaving the United States is normally referred to as adjustment of status.

KEY FEATURES OF THE LIFE ACT AND THE INCENTIVES FOR MARRIAGE

The LIFE Act, an immigration law, temporarily reinstated Section 245(i) of the Immigration and Nationality Act. The original Section 245(i) was enacted on October 2, 1994 and expired on January 14, 1998. The LIFE Act provided a small window of opportunity, from December 21, 2000 to April 30, 2001, for certain qualified undocumented immigrants to complete the process of becoming legal without having to leave the United States. Before this law change, undocumented immigrants who were ineligible for completing the process of becoming legal in the United States had to return to their home countries to complete the process.

In order to be eligible for the LIFE Act, an undocumented immigrant was required to prove that he or she was a spouse or relative of a US citizen or legal resident or an employee sponsored by his/her employer before the deadline and was in the United States on the date of enactment. Also, eligible undocumented immigrants must have their visa petitions or labor certifications submitted to the INS or the Department of Labor (DOL) during the 4.4-month window in order to take advantage of this law. Besides application fees, undocumented immigrants must pay a penalty fee of $1000 to process their applications in the United States.

In addition to temporarily reinstating Section 245(i), the LIFE Act created non-immigrant classes of admission, allowing entry of spouses and children of US citizens and permanent residents and their dependent children who had petitions for immigrant visas pending for 3 years or more.[3] The main objective of Section 245(i) of the Immigration and Nationality Act that was in effect from October 2, 1994 to January 14, 1998 was to encourage immigrant family reunification. This immigration law change would also reduce the workload at US consulates [Vlahos 2002]. Many qualified undocumented immigrants missed the January 14, 1998 deadline and others have since fallen out of legal status. Hence, the main objective of reinstating Section 245(i) (the LIFE Act) was to provide an opportunity for these undocumented immigrants to obtain legal residence in the United States [Michniak 2001]. During 2000 and 2001, three immigration reforms occurred [Ortega and Peri 2009].[4] Of the three, only the LIFE Act required, as part of its eligibility, that

an undocumented immigrant prove that he or she was a spouse or relative of a US citizen or legal resident.

The LIFE Act was well publicized in the media and it is reasonable to believe that many undocumented immigrants were aware of it. Apart from major headlines in most newspapers, especially local newspapers in immigrant gateway cities, and politicians' public service announcements, advocacy groups, legal service agencies, and religious organizations conducted informational seminars where the law change was explained. Some agencies conducted sessions to help undocumented immigrants fill out the appropriate immigration paper work [Gross 2001; Hernandez 2001]. Despite the attempts of several organizations to explain the immigration law change and who will benefit from it, there was misinformation about who was eligible for the immigration benefit. As a result, many undocumented immigrants rushed to the altar [Bach 2001].

Why was the LIFE Act critical for many undocumented immigrants? The US immigration law punishes immigrants for unlawful presence in the United States. An immigrant who accumulates more than 180 days of unlawful presence in the United States after April 1, 1997 was inadmissible for 3 years, if he or she subsequently left the United States. Similarly, an immigrant who accumulated 1 year or more of unlawful presence was inadmissible for 10 years. The bar of entry is applied only if the immigrant leaves the United States and tries to re-enter. Therefore, without the LIFE Act, some undocumented immigrants with unlawful presence were required not only to return to their home countries, but also many would face a bar from re-entering the United States for at least 3 years and perhaps as long as 10 years once they left. With the enactment of the LIFE Act, undocumented immigrants with unlawful presence could remain in the United States to complete the process of obtaining legal permanent residence and would not encounter these entry bars. The media reported that the INS expected anywhere from 200,000 to 640,000 undocumented immigrants around the country to benefit from the LIFE Act [Gross 2001].

Therefore, for many qualified undocumented immigrants, namely EWIs, the LIFE Act reduced the cost of obtaining legal status.[5] At minimum, these undocumented immigrants did not have to incur the cost of a trip to their home countries and the costs associated with being away from family, friends, and employment within the United States for possibly up to 10 years. Since being married to US citizens or legal permanent residents is one way undocumented immigrants can qualify for the immigration benefit and thus capture the reduced cost of legal status, I expect the immigration law change to influence the US marriage rates when the law change was in effect. In other words, if when the LIFE Act was in effect, the utility of undocumented immigrants associated with being married is expected to exceed the utility when single (because of the reduced cost of obtaining legal status), then undocumented immigrants would choose to marry during this period. If utility gains are expected from marriage during the window of opportunity created by the immigration law change, I expect undocumented immigrants with planned or tentative wedding dates that were not within the immigration window of opportunity, which would not allow them to take advantage of the law change to shift their plans to within the window. I also expect undocumented immigrants without marriage plans to have a higher propensity to get married within the window. If no utility gains are expected from marriage during the window of opportunity created by the immigration law change, then marriage rates should be unaffected.

LITERATURE REVIEW

Economic incentives are an integral part of the decisions on whether to marry and when to marry. The majority of the empirical literature on the effect of economic incentives on marriage emphasizes the net impact of the individual income tax and government transfers (mainly the Earned Income Tax Credit (EITC)) on the likelihood of being married and the timing of marriage. The consensus is that changes in the returns to marriage resulting from changes in the income tax and welfare systems have small or no effects on the decision whether and when to marry. Sjoquist and Walker [1995] estimated the effect of the differential tax treatment of married and unmarried couples, the so-called marriage tax/subsidy on the rate and timing of marriages using aggregate marriage rates in the United States from 1948 to 1987. Using data from multiple sources and three definitions for the marriage tax/subsidy, the authors estimated reduced-form time-series regressions of the propensity to marry against the marriage tax/subsidy and found that there is no significant effect of taxation on the marriage decision. Alm and Whittington [1995], however, used aggregate time-series evidence from 1947 to 1988 to demonstrate that the income tax/subsidy has a small but statistically significant impact on the decision to marry. The authors also investigated the impact of the marriage tax on the timing of marriages. Using the panel study of income dynamics (PSID), Alm and Whittington [1995] estimated the probability of the couple delaying marriage from 1 year to the next, thereby avoiding 1 year of the marriage penalty and found similar results to Sjoquist and Walker [1995]. The authors found that the marriage tax causes individuals to postpone marriages for short periods of time.

The empirical literature on the effect of government transfers on the decisions of whether and when to marry focuses mainly on welfare programs, in particular Aid to Families with Dependent Children (AFDC) and EITC. Moffitt [1998] reviewed the literature on the effect of AFDC on marriage and found that a majority of the studies' results suggest that there is a positive correlation between AFDC and being an unmarried mother. During the early to mid-1990s, the EITC expanded, and similar to other welfare programs, the changes in EITC could either penalize or subsidize marriage. Using data from the Survey of Income and Program Participation and controlling for individual-fixed effects and the endogeneity of the EITC, Dickert-Conlin and Houser [2002] found that the EITC expansions over the 1990s had little or no effect on marriage decisions.

Brien et al. [2004] shifted the focus of the empirical literature on the effect of government transfers on the decisions of whether and when to marry by examining the impact of a social security policy change (age restriction for remarriage) in widow benefits on the economic incentives for marriage. Using data from the Vital Statistics, the authors investigated the effect of the age 60 US social security rule on marriage by comparing marriage patterns before and after the 1979 law change, which eliminated the marriage penalty if the marriage occurred after reaching 60 years of age and comparing widows to divorced women. The results show that widows respond to economic incentives when considering the decision to remarry, low marriage counts in the months immediately preceding widows' 60th birthdays followed by large increases in the number of marriages on widows' 60th birthdays since 1979. These patterns were not observed in years when the relative marriage penalty was smaller or for divorced women who generally are not subject to the age 60 remarriage rule.

Like the welfare and income tax systems, many other government programs have implicit penalties or subsidies for marriage including immigration benefits. Jasso and

Rosenzweig [1990] find strong evidence that the imposition of numerical limits on the availability of immigrant visas has been followed by substantial increases in the numbers of immigrant spouses. This article extends the existing literature by analyzing the correlation between an immigration law change (the LIFE Act), which focuses on undocumented immigrants residing in the United States, and marriage using monthly aggregate time-series marriage data.

DATA AND AGGREGATE TIME-SERIES EVIDENCE

Aggregate time-series evidence using national data

One source of convincing evidence that the LIFE Act influences marriage behavior is time-series data on US aggregate marriage rates. I use national aggregate monthly marriage rates from 1999 to 2006 compiled by the National Center for Health Statistics (NCHS). The beginning of the time period under consideration, 1999, was chosen to isolate the impact of the LIFE Act from other major immigration law changes. An immigration law change called the LIFE Act 245(i) ended in January 1998. The time period used in the analysis ended in 2006 because national marriage rates for all 12 months were only available up to 2006.

The monthly marriage rate per 1,000 total population is based on the US Census Bureau estimated population per month. Summary statistics of aggregate monthly marriage rates are presented in Table 1, column 1, and reflect the fact that marriages typically follow a seasonal pattern, with fewer in the winter and more in the summer. Peak marriage months are May, June, July, August, September, and October, with the highest mean marriage rate of 9.950 in June. November to April have relatively low numbers of marriages. The lowest mean marriage rate is 5.300 and occurs in January.

Preliminary evidence of the impact of the immigration law change on marriage patterns is depicted in Figure 1. It shows deviations of 2001 monthly marriage rates from the mean monthly marriage rates. Because the unit of observation is monthly marriage rates, I am unable to include the 11 days in December 2000 when the LIFE Act was in effect and hence, define January, February, March, and April of 2001 as the measurable period when the immigration law was in effect. The average 2001 deviation from the mean is 0.3. All the months when the LIFE Act was in effect except February have large positive deviations from the mean in excess of the average deviation from the mean. January's deviation from the mean is twice the average deviation from the mean and April, the last month when the LIFE Act was in effect, has the largest deviation from the mean which is approximately five times the average deviation from the mean. This pattern of deviation is not consistent with marriage behavior in that relatively low numbers of marriages occur from November to April each year. This atypical marriage pattern suggests that in 2001, more marriages were occurring in March and April than in previous and later years. March and April of 2001 coincide with the window in which undocumented immigrants were allowed to apply for legal permanent residence, remain in the United States for the duration of the visa processing and be free from the penalty of unlawful presence. Therefore, the atypical seasonal marriage pattern, especially in March and April of 2001 suggests that incentives provided by the change in the immigration law affected marriage decisions.

One of the first few contemporary reports on the proposed plans for immigration reform was published on April 13, 2000 [Marinucci 2000]. The debate about

Table 1 Summary statistics: Means and standard deviations (in parentheses)

Variables	*Column 1*	*Column 2*	*Column 3*	*Column 4*
	The United States[a]	*Pooled data*[b]	*Pooled data — large immigrant counties*	*Pooled data — small immigrant counties*
Monthly marriage rates/counts				
January	5.300	109.358	586.367	51.788
	(0.659)	(259.934)	(576.523)	(71.849)
February	6.688	138.418	692.816	71.507
	(0.494)	(309.537)	(683.286)	(99.633)
March	6.638	153.825	788.174	77.266
	(0.472)	(349.950)	(763.946)	(113.869)
April	7.463	171.597	869.112	87.414
	(0.684)	(382.932)	(838.243)	(120.119)
May	8.563	189.251	842.949	110.356
	(0.431)	(347.710)	(705.573)	(134.533)
June	9.950	199.913	860.245	120.218
	(0.548)	(344.663)	(681.161)	(136.393)
July	9.588	196.980	846.020	118.648
	(0.405)	(338.472)	(666.392)	(135.076)
August	9.575	197.269	891.684	113.461
	(0.465)	(358.138)	(717.215)	(130.134)
September	9.288	177.458	778.429	104.927
	(0.764)	(308.140)	(599.817)	(120.342)
October	8.775	182.498	791.490	108.999
	(0.667)	(322.401)	(644.200)	(129.008)
November	7.063	143.928	698.143	77.039
	(1.046)	(293.648)	(606.569)	(105.105)
December	6.563	140.634	700.643	73.047
	(0.819)	(305.796)	(667.644)	(95.013)
Monthly unemployment rates	4.990	4.913	5.937	4.790
	(0.725)	(1.530)	(1.984)	(1.416)
Monthly female-to-male ratios	1.078			
	(0.006)			
Marriage rates/counts during	7.100	184.773	1093.161	75.140
LAW	(1.296)	(473.474)	(1035.219)	(110.168)
Marriage rates/counts six	9.117	173.258	763.179	102.060
Months before LAW	(1.469)	(313.894)	(630.209)	(125.973)
Marriage rates/counts six	9.467	185.367	798.143	111.411
Months after LAW	(0.339)	(331.340)	(680.353)	(130.060)
N	96	10920	1176	9744

[a]The marriage variable for the United States is monthly marriage rates.
[b]The marriage variable for the pooled data is monthly marriage counts.

undocumented immigrants centered on granting them amnesty. However, on December 12, 2000 Congress disclosed that a general amnesty was less likely to be passed and that current plans included allowing undocumented immigrant spouses of permanent residents and US citizens already living here to apply for new visas without returning to their home countries [Pear 2000]. Before December 2000, the spread of information about changes to the immigration laws that would help thousands of undocumented immigrants obtain legal residence had the ability to alter immigrants' behavior. It could have attracted new undocumented immigrants, reduced the number of undocumented immigrants returning home and altered

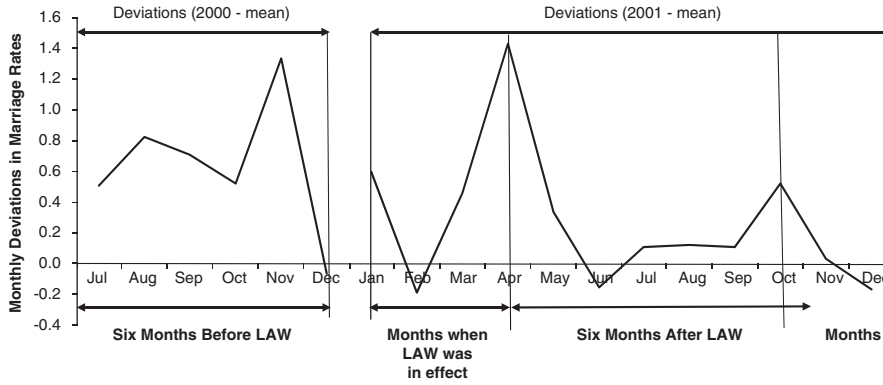

Figure 1. Deviations of 2000 and 2001 US monthly marriage rates from the mean (1999–2006).

existing marriage plans. While the immigration reform debate continues with many opposing general amnesty, some undocumented immigrants will proceed with existing marriage plans, some may get married earlier (strengthening ties with the United States), and others may delay marriage until the immigration law is passed (if amnesty is granted, assistance of spouse for legal residence status is not required). After the enactment of the immigration law, some undocumented immigrants with planned or tentative wedding dates that were not within the immigration window of opportunity shifted them within the window and some without marriage plans had a higher propensity to get married within the window. Hence, in addition to examining the impact of the LIFE Act on marriage rates during the window created by the immigration law change, I examine marriage patterns before and after this window. Such analysis will reveal whether undocumented immigrants altered their marriage plans before the law was enacted or moved their marriage dates forward to coincide with the window created by the immigration law change.

Figure 1 highlights the deviations of monthly marriage rates from the mean 6 months before and after the immigration law changed. July to December of 2000 is the 6-month period before the immigration law changed and is represented by deviations of 2000 monthly marriage rates from the mean monthly marriage rates. The average deviation from the mean is 0.5. All the months in the 6-month period before the immigration law changed, except December, have positive deviations from the mean around or above the average deviation from the mean. November's deviation from the mean was approximately three times the average deviation from the mean. In contrast, December's deviation from the mean was negative. May to October of 2001 is the 6-month period after the immigration law changed. This period is represented by deviations of 2001 monthly marriage rates from the mean monthly marriage rates. Four of the six months in this time period had deviations below the average deviation. June's deviation was negative.

The identification strategy for investigating the effect of the LIFE Act on marriage is a comparison of marriage patterns before, during, and after the immigration law change. While the descriptive analysis provides preliminary evidence of the impact of the immigration law change on marriage behavior, it does not account for other factors and it does not allow for testing the statistical significance of the deviations in monthly marriage rates from the mean before, during, and after the LIFE Act was in effect. The deviations in monthly marriage patterns are formally analyzed using regression analysis.

Summary statistics for the variables in levels used in the regression analysis are presented in Table 1, column 1. The average of the monthly unemployment rate is 4.990. The monthly unemployment rate is included in the model to control for business cycles. Silver [1965] found that there is a direct relationship between marriage rates and the business cycles. The ratio of female to male influences the equilibrium condition in the marriage market and therefore is included in the model. In the sample, the mean of the monthly female-to-male ratios is greater than one. This implies a negative relationship between marriage rates and the female-to-male ratio. The mean marriage rate when the LIFE Act was in effect is 7.100; however, during this period marriage rates ranged from a minimum of 5.900 to a maximum of 8.900. The mean of the marriage rates in the 6 months before and after the LIFE Act are 9.117 and 9.467, respectively. With 8 years of data, the number of observations is 96.

The functional form is log-linear so that the regression coefficient representing the impact of the immigration law change can be interpreted as a percentage change. Before estimation, I examine the stationarity properties of the continuous variables and the results suggest that the log of monthly unemployment rates and the log of monthly female-to male ratios are not stationary. The first differences of the log of monthly unemployment rates and the log of monthly female-to-male ratios are used to correct for the presence of a unit root in these variables. Hence, the following log-linear regression is used to obtain the impact of the immigration law change on national monthly marriage rates:

$$\begin{aligned} ln(MAR_t) =& \beta_1 \Delta ln(UNEMP_t) + \beta_2 \Delta ln(FMRatio_t) \\ & + \beta_3 LAW_t + \gamma_t + \delta_t + \varepsilon_t \end{aligned} \tag{1}$$

where the dependent variable, $ln(MAR_t)$, is the natural log of US monthly marriage rates, $\Delta ln(UNEMP_t)$ is the first difference of the log of monthly unemployment rates, and $\Delta ln(FMRatio_t)$ is the first difference of the log of monthly female-to-male ratios where the females and males are aged 16 years and above.[6] LAW_t is a dummy variable equal to 1 during the months when the immigration law change was in effect, γ_t is a full set of month-fixed effects, δ_t is a full set of calendar-year-fixed effects, and ε_t is a disturbance term.

Equation (1) represents the basic model and was estimated by generalized least squares using the Prais–Winsten correction for first order autocorrelation with robust standard errors.[7] The month-fixed effects control for the seasonality in marriage rates and the year-fixed effects control for national trends in marriage behavior over time. The results are reported in Table 2, column 1, and include the relative percent increase in marriage rates in brackets. The relative percent increase in marriage rates was approximately 10 percent when the LIFE Act was in effect, implying that marriages in the months when the LIFE Act was in effect was differentially more than the same periods in previous and later years when the LIFE Act was not in effect.

To examine marriage patterns in a period of 6 months before the LIFE Act, I create the variable $BEFORELAW_t$ that equals 1 during July, August, September, October, November, and December of 2000. Similarly, to examine marriage patterns in a period of 6 months after the LIFE Act, I create the dummy variable $AFTERLAW_t$ that equals 1 during May, June, July, August, September, and October of 2001. I include the variables $BEFORELAW_t$ and $AFTERLAW_t$ in the model represented by equation (1). This modification to the model produces

Table 2 OLS parameter estimates for the US marriage rates

Dependent variable is the log of marriage rate	*Column 1*	*Column 2*
Independent variables		
LAW_t	0.099**	0.107
	(0.052)	(0.066)
	{10.407%}	{11.293%}
$BEFORELAW_t$		−0.001
		(0.053)
		{0.100%}
$AFTERLAW_t$		0.010
		(0.040)
		{1.005%}
Monthly unemployment growth rate	0.294	0.294
($\Delta lnUNEMP_t$)	(0.266)	(0.268)
Female-to-male ratio growth rate	−9.646	−9.608
($\Delta lnFMRatio_t$)	(18.808)	(18.864)
January	−0.297*	−0.298*
	(0.037)	(0.039)
February	−0.061	−0.062
	(0.041)	(0.044)
March	−0.062**	−0.063**
	(0.034)	(0.038)
April	0.052	0.051
	(0.039)	(0.042)
May	0.204*	0.203*
	(0.041)	(0.044)
June	0.352*	0.351*
	(0.035)	(0.039)
July	0.318*	0.317*
	(0.038)	(0.042)
August	0.317*	0.315*
	(0.035)	(0.039)
September	0.285*	0.284*
	(0.035)	(0.039)
October	0.227*	0.226*
	(0.033)	(0.037)
December	−0.062*	−0.062*
	(0.031)	(0.031)
N	95	95

Robust standard errors are in parentheses and marginal effects in percent are in brackets.
Percentage change = 100*[exp(estimated coefficient)−1].
*Statistically significant at the 5 percent level.
**Statistically significant at the 10 percent level.

results shown in Table 2, column 2. The coefficient on the variable LAW_t is approximately 11 percent; however, it is not statistically significant from zero at the 5 or 10 percent level. This indicates that there was no significant change in national marriage patterns when the LIFE Act was in effect. Similarly, the coefficients on the variables $BEFORELAW_t$ and $AFTERLAW_t$ are statistically insignificant indicating no significant change in national marriage patterns in the 6 months before and after the LIFE Act was in effect.

The coefficients on the growth rate of the female-to-male ratio in both models have the expected negative sign and are statistically insignificant at standard levels.

The unemployment growth rate in all the models has an insignificant effect on the marriage rate and the coefficients of the dummy variables representing the months reflect the seasonal pattern of marriages. In sum, possible difference in marriage behavior of undocumented immigrants resulting from an immigration law change is not reflected in the national marriage data. This result is reasonable because undocumented immigrants are a small portion of the total US population. In 2000, undocumented immigrants accounted for approximately 3.64 percent of the total US population [Costanzo et al. 2002]. A more accurate impact of the immigration law change on marriage behavior of undocumented immigrants requires a sample with a larger undocumented immigrant population. The next section describes this analysis.

Aggregate time-series evidence using county data

In this section, I exploit the high concentration of immigrants in some states and counties of the country. The unit of observation is county monthly marriages. The time period considered is from 1999 to 2005, and the data were provided by the States' Department of Health.[8] The decennial census reports per county percentage of persons who are foreign born for the year 2000,[9] and it was calculated at one point in time; these data were not produced for the undocumented foreign born. Hoefer et al. [2008] show that states with the highest proportion of immigrants also have the highest proportion of undocumented immigrants. Hence, I use per county percentage of foreign born for the year 2000 as a proxy for per county percentage of undocumented foreign born for the year 2000. Using this proxy, I classify counties as either small or large immigrant population counties. Small immigrant population counties are counties with foreign-born populations less than or equal to 10 percent and large immigrant population counties have foreign-born populations greater than or equal to 20 percent. Three cutoffs for small and large immigrant population counties were experimented with and they all produced similar results. The three definitions of the small and large immigrant population counties, the results, and a summary of the main results are in the Appendix. The comparison of marriage patterns in small and large immigrant population counties before, during, and after the immigration law change is the source of the identification.

Undocumented and documented immigrants are spreading over more regions; however, the principal states where they reside are California, Texas, New York, Florida, New Jersey, and Illinois [Passel et al. 2004]. New York, Florida, and New Jersey are the three "immigrant receiving" states examined. They were chosen for their large immigration population and availability of the required data. California was excluded from the analysis because the key variable, county monthly marriages, was not compiled for all the counties of the state. Texas was excluded because the data available were monthly marriage applications in each county, whereas the other states' data sets consist of actual county monthly marriages. In this analysis, marriage counts in large immigrant population counties are compared to marriage counts in small immigrant population counties. Based on the definition that large immigrant population counties have foreign-born populations greater than or equal to 20 percent, Illinois had no large immigrant population counties, and therefore, it was excluded from the sample.

The small and large immigrant population counties from New York, Florida, and New Jersey are combined, producing a sample size of 10,920 observations. The foreign-born population in the counties range from 1.1 to 50.9 percent. Of the 10,920 observations, 1,176 observations are large immigrant population counties,

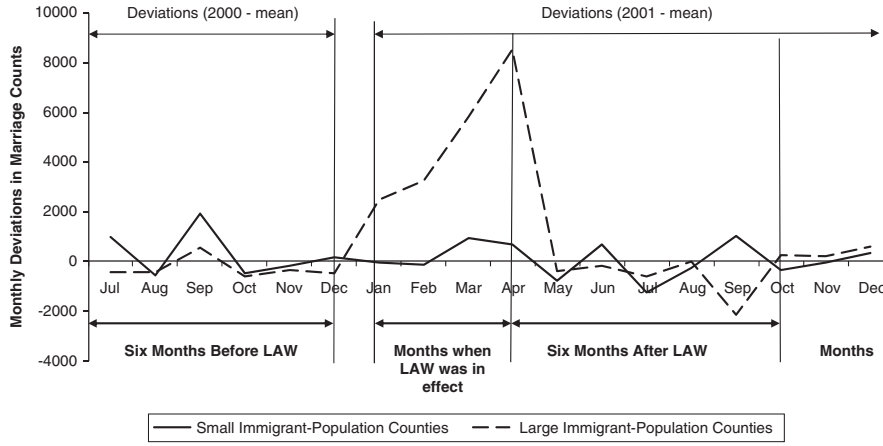

Figure 2. Deviations of 2000 and 2001 county monthly marriage counts from the mean (1999–2005).

accounting for approximately 11 percent of the sample, and 9,744 observations are small immigrant population counties, accounting for approximately 89 percent of the sample. This data set is referred to as the pooled data set.

Summary statistics of aggregate monthly marriage counts for the pooled data, small and large immigrant population counties, are presented in Table 1, columns 2 to 4. In all samples of the pooled data set, the highest mean marriage count occurs in the summer and the lowest in the winter. The marriage counts in the large immigrant population counties are approximately 8–10 times the marriage counts in the small immigrant population counties. The average of the monthly unemployment rate for the full sample of the pooled data is similar to that of the United States, approximately 5.0. However, the average of the monthly unemployment rate for the large immigrant population counties is greater than the rate for the small immigrant population counties by approximately 1 percent — 5.937 and 4.790, respectively.

Figure 2 depicts further preliminary evidence that the LIFE Act had a differential impact on the pattern of marriage counts in small and large immigrant population counties. It shows deviations of 2000 and 2001 monthly marriage counts from the mean in small and large immigrant population counties. During the period when the LIFE Act was in effect, the deviations from the mean are larger in large immigrant population counties than in small immigrant population counties. The largest average deviation in large immigrant population counties during this period occurred in April and is approximately 13 times the deviations in small immigrant population counties. This difference in deviations is expected since large immigrant population counties are more likely to have more undocumented immigrants seeking legal residence status than small immigrant population counties. Also highlighted on Figure 2 are the 6-month periods for small and large immigrant population counties before and after the months when the immigration law was in effect. The deviations in both periods are similar with the exception of September 2001. While the deviations in the number of marriages increased in large immigrant population counties in September 2001, the opposite occurred for small immigrant population counties.

There are several possible reasons why marriage patterns of residents in large immigrant population counties might be different from those of residents in small immigrant population counties, for example, economic opportunities and social lifestyles. To isolate the effect of the immigration law change on marriage counts in small and large immigrant population counties and test the statistical significance of the difference in marriage deviations, I employ a difference-in-differences methodology. I compare the change in marriage counts in large immigrant population counties over time to the change in marriage counts of small immigrant population counties over time. The difference in the comparisons over time eliminates the effect of other factors that are similar to small and large immigrant population counties, thereby isolating the effect of the immigration law change on marriage counts. Implicit in this analysis is the condition that, in the absence of the change in the immigration law, no significant differences exist in the relative pattern of marriage counts.

The ideal data set for this analysis is one that distinguishes individuals as legal and undocumented. This data set is not available, and because of this limitation, I use the size of immigrant populations in counties (small and large) as control and treatment groups in the difference-in-differences framework. While the size of the immigrant population in counties does not indicate whether or not the immigrants are legal or undocumented and how many are undocumented, they are good proxies. Small immigrant population counties have fewer immigrants and are more likely to have fewer undocumented immigrants, while large immigrant population counties have a large number of immigrants and are more likely to have a large number of undocumented immigrants. Therefore, small and large immigrant population counties are good proxies for the legal and undocumented populations, respectively.

Because of the fact that the immigration law change only applies to undocumented immigrants, I assume that the immigrants or majority of the immigrants who responded to the immigration law change were undocumented immigrants, many of whom reside in large immigrant population counties. Likewise, because very few immigrants reside in small immigrant population counties, I expect little to no response in these counties. It is reasonable to assume that the immigrants who responded to the immigration law change were undocumented because the remainder of the population, legal residents and immigrants with unexpired visas, were ineligible for the immigration benefit.[10] Legal residents had no need for the immigration benefit, and immigrants with unexpired visas were not eligible applicants for the immigration benefit.

To examine the relationship between an immigration law change and marriage patterns in small and large immigrant population counties empirically, the regression specification is:[11]

$$\begin{aligned} ln(MAR_{ct}) =& \beta_1 ln(UNEMP_{ct}) + t_c + \beta_2(LARGE_c) + \beta_3(LAW_t) \\ &+ \beta_4(LARGE * LAW_{ct}) + \phi_c + \gamma_t + \varepsilon_{ct} \end{aligned}$$

where c indexes counties and t indexes time. The dependent variable, $ln(MAR_{ct})$, a stock variable, is the log of monthly marriage counts per county of the states considered. The variable $ln(UNEMP_{ct})$ is the natural log of county monthly unemployment rate, t_c represents monthly county-specific time trends, ϕ_c is a full set of county-fixed effects, and γ_t is a full set of month-fixed effects. $LARGE_c$ is a dummy variable that takes on a value of 1 if the counties are large immigrant population counties and 0 if the counties are small immigrant population counties; LAW_t is a dummy variable equal to 1 during the months of January, February,

March, and April of 2001, the measurable months when the LIFE Act was in effect; $LARGE^*LAW_{ct}$ is a dummy variable that takes on the value of 1 for large immigrant population counties during the period of the immigration law change; and ε_{ct} is a disturbance term.

The ideal dependent variable is the county monthly marriage rate per 1,000 population. However, to the best of my knowledge, the county monthly marriage rate is not available. One way to overcome this data limitation is to include county monthly population or state monthly population as an independent variable. Still, neither of these variables is available to the best of my knowledge. In order to overcome this data limitation, I include monthly county-specific time trends and county-fixed effects. The monthly county-specific time trends will capture the change in counties' monthly marriage counts over time. For example, if a specific county always has a larger population, and thus more monthly marriages, then the county-specific time trends will capture this pattern. The county-fixed effects control for any fixed-county-specific omitted variables correlated with marriage behavior. The county-specific time trends and county-fixed effects will also capture changes in the counties' population. Many immigrants come to work in the United States in the summer months and return to their countries in the winter months. Because information about immigration reform was spreading, it is possible that compared to previous years, immigrants did not return to their home countries in the winter months. Similar to the model represented by equation (1), the unemployment rate controls for the business cycle.[12]

After deleting observations with a zero marriage count, the sample size is 10,908. The omitted group is the small immigrant population counties and the parameter of interest is β_4.[13] Table 3, column 1, presents the estimated coefficients for selected variables in equation (2) and the relative percent increase in marriage counts. The coefficient of interest β_4 is 0.503 and is significantly different from zero at the 5 percent level. The positive and statistically significant coefficient implies that residents in large immigrant population counties married differentially more than residents in small immigrant population counties when the LIFE Act was in effect. In percentage terms, the total number of marriages in large immigrant population counties is approximately 65 percent higher than the total number of marriages in small immigrant population counties.

I modify the model in equation (2) to examine whether undocumented immigrants delayed marriage or moved their marriage dates forward to coincide with the window created by the immigration law change and the results are shown in Table 3, column 2. This column depicts the results when all three interaction variables, namely $LARGE^*BEFORELAW$, $LARGE^*LAW$, and $LARGE^*AFTERLAW$, are included in the model. The coefficient on the variable $LARGE^*LAW$ continues to be positive and statistically significant from zero at the 5 percent level. However, the relative percent increase in marriage counts is slightly lower in this model and was approximately 59 percent when the LIFE Act was in effect.

A 59 percent relative increase in marriages for large immigrant population counties when the LIFE Act was in effect is large. The immigration law change should only have affected a certain class of undocumented immigrants, namely EWIs; however, as the media reported, because of misinformation about who was eligible for the immigration benefit, many undocumented immigrants rushed to the altar [Bach 2001]. Assuming both EWIs and overstayers rushed to the altar, the estimated 59 percent relative increase in marriages is for all undocumented immigrants in the large immigrant population counties examined. In our sample,

Table 3 Difference-in-differences parameter estimates

Dependent variable is the log of marriage counts	*Column 1*	*Column 2*
Independent variables		
$LARGE^*LAW_t$	0.503*	0.463*
	(0.070)	(0.068)
	{65.367%}	{58.883%}
$LARGE^*BEFORELAW_t$		−0.103*
		(0.029)
		{−9.787%}
$LARGE^*AFTERLAW_t$		−0.238*
		(0.116)
		{−21.180%}
Log of monthly unemployment rate	−0.578*	−0.607*
($lnUNEMP_t$)	(0.051)	(0.054)
February	0.295*	0.294*
	(0.013)	(0.013)
March	0.294*	0.293*
	(0.018)	(0.018)
April	0.429*	0.425*
	(0.019)	(0.019)
May	0.695*	0.698*
	(0.027)	(0.027)
June	0.864*	0.868*
	(0.034)	(0.033)
July	0.857*	0.874*
	(0.041)	(0.042)
August	0.783*	0.799*
	(0.047)	(0.048)
September	0.690*	0.706*
	(0.042)	(0.042)
October	0.670*	0.685*
	(0.036)	(0.036)
November	0.282*	0.292*
	(0.020)	(0.019)
December	0.283*	0.293*
	(0.016)	(0.015)
N	10908	10908

Robust standard errors are in parentheses and marginal effects in percent are in brackets.
Percentage change = 100*[exp(estimated coefficient)−1].
*Statistically significant at the 5 percent level.
**Statistically significant at the 10 percent level.

the average number of marriages in large immigrant population counties from 1999 to 2005, excluding 2001 from January to April, is 39,762. A 59 percent increase translates into an additional 23,460 marriages from January to April of 2001. Is this increase reasonable?

In 2000, there were 1,690,000 undocumented immigrants residing in New York, New Jersey, and Florida [Hoefer et al. 2008]. Data from the 2000 census indicate that approximately 78, 72, and 59 percent of the foreign born reside in the large immigrant population counties of New York, New Jersey, and Florida, respectively. I use the average percent of foreign-born population in these large immigrant population counties (70 percent) to obtain the undocumented population in the large immigrant population counties. Of the 1,690,000 undocumented immigrants in

the selected states 1,183,000 undocumented immigrants reside in large immigrant population counties.

To obtain the undocumented adult population in 2000 for the large immigrant population counties, I use the January 2007 estimate of the percent of undocumented immigrants who were under 18 years of age.[14] In 2007, 14 percent of the undocumented population was under 18 years of age, thus, the estimated adult population in 2000 for the large immigrant population counties was 1,017,380. According to the Current Population Survey (CPS), in the United States, the percent of persons aged 18 years and above who were married in 2000 was approximately 60 percent. Assuming that the same fraction of the adult undocumented immigrants were married as among the similarly aged cohort of the US population, then the unmarried population of undocumented immigrants in the large immigrant population counties were 406,952. To obtain the estimated increase of 23,460 marriages, approximately 6 percent of the unmarried undocumented immigrants in large immigrant population counties would have had to get married when the LIFE Act was in effect.

If we assume that only EWIs responded to the immigration law change, then a similar calculation indicates that approximately 9 percent of the unmarried EWIs in large immigrant population counties would have had to get married when the LIFE Act was in effect. This percent was computed using the estimate that 67 percent of undocumented immigrants residing in the United States in January 2000 were EWIs. Therefore, although the estimated effect of 59 percent is large, it is plausible. A large estimated effect is also reasonable if the majority of the undocumented immigrants that rushed to the altar were already courting or living with US citizens or legal immigrants, some of whom had children [Marquez 2001].

The coefficient on the interaction term *LARGE*BEFORELAW* is statistically significant at the 5 percent level suggesting that approximately 10 percent of marriages by undocumented immigrants were delayed until the window created by the immigration law change. Similarly, the coefficient on the variable *LARGE* AFTERLAW* in Table 3, column 2, suggests that some undocumented immigrants moved their wedding dates up to coincide with the period when the LIFE Act was in effect [Marquez 2001]. The coefficient is -0.238 and implies that there was a 21 percent reduction in marriages in the 6-month period following the change in the immigration law.[15]

In all the models, the coefficient on the monthly unemployment rate and dummy variables representing the months have the expected signs and are statistically significant at the 5 percent level. In sum, the LIFE Act provided incentives for marriage and marriage patterns deviated from the normal pattern before, during, and after the immigration law change in large immigrant population counties.

CONCLUSION, FUTURE RESEARCH AND POLICY IMPLICATIONS

Using US monthly marriage rates from 1999 to 2006 and county monthly marriage counts for three large immigrant receiving states from 1999 to 2005, I find that an immigration law change that allowed some undocumented immigrants to apply for legal permanent residence, remain in the United States for the duration of the visa processing and be free from the penalty of unlawful presence affects marriage patterns before, during, and after the immigration law change was in effect.

The results indicate that the LIFE Act did not have an impact on the national marriage rates. However, the immigration law change had an impact on county marriage counts.

Employing a difference-in-differences methodology, I analyze the marriage propensity of residents in small and large immigrant population counties. The results indicate that during the months when the immigration law change was in effect, marriage counts increased in large immigrant population counties relative to small immigrant population counties. I also investigate whether couples shift the timing of their marriage to coincide with the window created by the immigration law change. I find empirical support that marriage patterns fell in both the 6-month period before and after the immigration law changed. The relative increase in monthly marriage counts during the immigration law change and the fall in marriage counts before and after the immigration law changed suggest that the immigration law change affected the decision of when to marry for some undocumented immigrants. The sum of relative percent decreases in marriage counts before and after the immigration law change is less than the relative percent increase during the law change. Hence, apart from influencing the decision of when to marry, it is possible that some of these marriages may have occurred for the main purpose of becoming eligible for the immigration benefit.

The empirical results provide evidence that the LIFE Act affected the timing of marriages. A related issue is whether or not the immigration law change affected another vital statistic, the divorce rate. The annual national divorce rate per 1,000 total population in the United States reported by the NCHS has declined steadily from 4.1 in 1999 to 3.6 in 2006. Similarly, mean annual divorce rates in small immigrant population counties declined steadily from 4.1 in 1999 to 3.3 in 2005. In contrast, the mean annual divorce rates in large immigrant population counties increased from 3.8 in 1999 to a peak of 4.4 in 2002, and then decreased to 3.8 percent in 2005. The difference in the pattern of mean annual divorce rates in large immigrant population counties, as well as both national and small immigrant population counties' rates, provide suggestive evidence that the LIFE Act probably had an impact on annual divorce rate patterns in large immigrant population counties.

The relative percent increase in marriage counts when the LIFE Act was in effect raises additional issues that cannot be adequately addressed with aggregate time-series data. For example, who are immigrants marrying? Are they marrying native born US citizens or immigrants who have naturalized? Jasso and Rosenzweig's [1989] analysis of the information in the 1988 General Accounting Office report indicates that 80 percent of the persons who immigrated in the fiscal year 1985 as the spouse of US citizens were sponsored by native born US citizens. In 2000, Jasso et al., without making the distinction between citizens who are native born and immigrants who have naturalized, reported that almost 41 percent of married fiscal year 1996 immigrants aged 18 years and above were sponsored by a US citizen. The authors also reported that among married couples formed by a US citizen sponsoring the immigration of a spouse, husbands, and wives have similar levels of schooling with the US citizen slightly better educated than the immigrant spouse. Among US citizens, men are more likely than women to sponsor foreign spouses [Jasso and Rosenzweig 1990]. Future research is needed on assortative mating of immigrants that include multiple variables, such as age, education, earnings, and hours worked. In addition, another direction for future research is to estimate the value of legal permanent residence or citizenship.

Data from the US Department of Homeland Security reveals that the number of applications for obtaining legal status from within the United States (I-485) received was approximately 34 percent higher in 2001 than in 2000.[16] This suggests that the immigration policy had the ability to increase the number of documented immigrants and may be a policy worth considering given the policy debates about the large and rapidly growing number of undocumented immigrants residing in the United States. Implementation of such a policy in the future has its advantages and disadvantages. The revenue generated and large response rate are major advantages; however, its main disadvantage is that such a policy might induce fraudulent marriages. Marriage fraud poses a significant threat to the integrity of the immigration system, as it is the easiest and most frequently used means of obtaining permanent resident status.

Acknowledgements

I thank Dan Black, Gary Engelhardt, Jeffrey Kubik, Jan Ondrich, Claude Smith, Kelly Bogart, and three anonymous referees, staff at Texas, Florida, New York, and New Jersey State Department of Health and seminar participants at Syracuse University for many helpful suggestions, comments, and data. Elvira Yaparova provided excellent research assistance.

APPENDIX

To analyze the county data, I classify counties as either small or large immigrant population counties. The following three cutoffs for small and large immigrant population counties were experimented with and they all produced similar results.

1. Small immigrant population counties are counties with foreign-born populations less than or equal to 10 percent and large immigrant population counties have foreign-born populations greater than or equal to 20 percent.
2. Small immigrant population counties are counties with foreign-born populations less than or equal to 5 percent and large immigrant population counties have foreign-born populations greater than or equal to 15 percent.
3. Small immigrant population counties are counties with foreign-born populations less than or equal to 15 percent and large immigrant population counties have foreign-born populations greater than or equal to 25 percent.

Results for classification 1 are presented in the article and the results for classifications 2 and 3 are presented in Tables A1 and A2. All three classifications have similar results. The results indicate that during the immigration law change marriages increased by 59, 60 and 62 percent for the three cutoffs for small and large immigrant population counties. Similar results were obtained for the 6-month periods before and after the immigration law change. The similarity of the results reveals that the estimated impact of the immigration law change on marriages is not sensitive to the cutoffs for small and large immigrant population counties.

Table A1 Difference-in-differences parameter estimates: small immigrant population counties $\leqslant 5\%$, large immigrant population counties $\geqslant 15\%$

Dependent variable is the log of marriage counts	*Column 1*	*Column 2*
Independent variables		
$LARGE^*LAW_t$	0.508*	0.471*
	(0.059)	(0.055)
	{66.196%}	{60.159%}
$LARGE^*BEFORELAW_t$		−0.081*
		(0.031)
		{−7.781%}
$LARGE^*AFTERLAW_t$		−0.207*
		(0.080)
		{−18.698%}
Log of monthly unemployment rate	−0.632*	−0.670*
($lnUNEMP_t$)	(0.054)	(0.056)
February	0.307*	0.307*
	(0.016)	(0.016)
March	0.301*	0.299*
	(0.022)	(0.022)
April	0.430*	0.425*
	(0.022)	(0.022)
May	0.692*	0.695*
	(0.032)	(0.031)
June	0.882*	0.887*
	(0.038)	(0.037)
July	0.910*	0.933*
	(0.047)	(0.047)
August	0.835*	0.856*
	(0.054)	(0.054)
September	0.718*	0.739*
	(0.045)	(0.045)
October	0.663*	0.683*
	(0.040)	(0.039)
November	0.268*	0.282*
	(0.024)	(0.023)
December	0.291*	0.304*
	(0.019)	(0.018)
N	8221	8221

Robust standard errors are in parentheses and marginal effects in percent are in brackets.
Percentage change = 100*[exp(estimated coefficient)−1].
*Statistically significant at the 5 percent level.
**Statistically significant at the 10 percent level.

Table A2 Difference-in-differences parameter estimates: small immigrant population counties $\leqslant 15\%$, large immigrant population counties $\geqslant 25\%$

Dependent variable is the log of marriage counts	*Column 1*	*Column 2*
Independent variables		
$LARGE^*LAW_t$	0.532*	0.481*
	(0.061)	(0.054)
	{70.233%}	{61.769%}
$LARGE^*BEFORELAW_t$		−0.127*
		(0.030)
		{−11.927%}
$LARGE^*AFTERLAW_t$		−0.320*
		(0.149)
		{−27.385%}
Log of monthly unemployment rate	−0.563*	−0.592*
($lnUNEMP_t$)	(0.051)	(0.054)
February	0.296*	0.295*
	(0.013)	(0.013)
March	0.295*	0.294*
	(0.017)	(0.018)
April	0.431*	0.427*
	(0.018)	(0.018)
May	0.693*	0.695*
	(0.027)	(0.026)
June	0.861*	0.866*
	(0.033)	(0.033)
July	0.848*	0.865*
	(0.041)	(0.042)
August	0.773*	0.788*
	(0.046)	(0.047)
September	0.686*	0.701*
	(0.041)	(0.042)
October	0.668*	0.683*
	(0.035)	(0.035)
November	0.288*	0.297*
	(0.019)	(0.019)
December	0.284*	0.293*
	(0.015)	(0.015)
N	11496	11496

Robust standard errors are in parentheses and marginal effects in percent are in brackets.
Percentage change = 100*[exp(estimated coefficient)−1].
*Statistically significant at the 5 percent level.
**Statistically significant at the 10 percent level.

Notes

1. Data from the US Department of Homeland Security reveal that the number of applications for obtaining legal status from within the United States (I-485) received was approximately 34 percent higher in 2001 than in 2000.
2. Skill-based admissions apply to highly skilled foreign-born individuals, particularly professionals with advanced and baccalaureate degrees, entrepreneurs, multinational executives and managers, individuals with extraordinary ability ministers, and religious workers. Refugee and humanitarian admissions include individuals classified as refugees and asylees based on human rights and humanitarian considerations.
3. According to the INS, the law also included provisions for individuals involved in three amnesty lawsuits and individuals who previously could not have been eligible for relief under the Nicaraguan Adjustment and Central American Relief Act or the Haitian Refugee Immigration Fairness Act because they were ordered deported or removed from the United States.
4. In 2008, Ortega and Peri created an "Immigration Reform Appendix," which is available at http://www.econ.ucdavis.edu/faculty/gperi/Papers/immigration_reform_appendix.pdf
5. Status violators who are applying for legal status through marriage to a US citizen do not need the LIFE Act since the process of obtaining legal residence status normally does not involve a trip to his or her home country and will therefore not trigger the entry bars.
6. The Bureau of Labor Statistics is the source for the national monthly population of men and women aged 16 years and above.
7. The sample size is now 95 observations because one observation is lost from first differencing.
8. The time period ended at 2005 because data for New Jersey marriage counts were not available for 2006.
9. Census 2000 Summary File 3 (SF 3).
10. Legal residents include citizens and legal permanent residents.
11. Panel unit root tests were conducted for all continuous variables and the null hypotheses were rejected.
12. Most empirical tests of Becker's marriage model have a richer set of covariates than those used in my estimation [Alm and Whittington 1995; Sjoquist and Walker 1995; Dickert-Conlin and Houser 2002]. These include the ratio of female to male, percent Catholic, single female earnings, relative earnings, percent of men aged 15 to 44 years who have graduated from high school, and percent of population aged 15 to 44 years who are white. My limited number of covariates is a result of data limitation; the unit of analysis is county per month per year; and to my knowledge, the data for the excluded covariates does not exist at this unit of analysis. However, this data limitation is minimized by using county-fixed effects and county-specific time trends. The inclusion of these variables will adequately absorb the variation that the excluded covariates would have absorbed.
13. The estimated difference-in-differences regression corrects for serial correlation by clustering on counties [Bertrand et al. 2004].
14. The 2007 estimate of the percent of undocumented immigrants who were under the age of 18 years was the earliest I could find and was documented in Hoefer et al. [2008]. This percent is for the entire undocumented immigrant population.
15. During this period, Congress was working on a legislation to extend the deadline of the LIFE Act [Gamboa 2001]. The anticipation of a new deadline should not affect marriage plans because the extension of the deadline was being sought for eligible undocumented immigrants who were not able to file their paper work with INS before April 30 [D'Agostino 2001]. The deadline of April 30, 2001 was not extended.
16. In 2000, the US Department of Homeland Security received 562,021 adjustment of status applications, and in 2001, they received 754,133 applications.

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