The Expatriation Act of 1907, Freedom of Marriage, and Citizenship-Based Intermarriage in the U.S.*

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Abstract

As both a marriage act and an immigration act, the Expatriation Act of 1907 restricted U.S. women’s freedom of marriage by stating that marrying aliens would lead to loss of U.S. citizenship. Using 1910 U.S. census data, I estimate the effect of the Expatriation Act of 1907 on the pattern of intermarriage. I find that trends in intermarriage among U.S. women with birthright citizenship were fairly stable before the passage of the Expatriation Act; afterwards, U.S. women became significantly less likely to marry foreign-born men, and non-citizens in particular. Further analyses suggest such downward trends in intermarriage should be mainly related to concerns about loss of citizenship, but not anti-immigration attitudes in the marriage market. I also find that alternative mechanisms—including effects of the Expatriation Act on women’s socioeconomic status, remarriage, and emigration—cannot explain the main results. Finally, the effect of the Expatriation Act appears to be heterogeneous by region and family immigration history.

Keywords: expatriation, citizenship, immigration, intermarriage, early twentieth century U.S.

JEL Classification: N3, J1, K3
1 Introduction

The early twentieth century U.S. was an era of mass migration (Abramitzky and Boustan, 2017). At the same time, several laws against immigrants were passed in the background of anti-immigration populism, such as Chinese and Asiatic exclusion laws (Kanazawa, 2005), Naturalization Act of 1906 that required immigrants to learn English (Bloemraad, 2006), Immigration Act of 1907 that restricted immigrants with health issues (Markel and Stern, 1999), and quota-based immigration restriction laws in the 1920s (Ngai, 1999, 2004). Compared with these laws, the Expatriation Act of 1907 was essentially different: it targeted U.S. citizens by stating that a female citizen who married an alien (i.e., non-citizen) would lose her citizenship and had to take on her husband’s nationality. In this paper, I exploit 1910 U.S. census data (Ruggles et al., 2019) and estimate the effect of the Expatriation Act of 1907 on citizenship-based intermarriage.

This paper contributes to the existing literature along three dimensions. First, this paper is related to gender inequality. Bans on interracial marriages (although mainly concerning black-white marriages) were declared unconstitutional in all U.S. states only in the 1960s (Fryer, 2007); marriages with immigrants were not widely welcome in the early twentieth century (e.g., Pagnini and Morgan, 1990; Wong, 2016) and were at least heterogeneous by immigrant group (e.g., Sassler, 2005; Logan and Shin, 2012; Wildsmith et al., 2012). Even nowadays, intermarriages are not always socially accepted in the U.S. (e.g., Kinder and Mendelberg, 1995; Herman and Campbell, 2012) and Europe (e.g., Ford, 2008; Huijnk and Liefbroer, 2012; Voigtländer and Voth, 2013). In the context of this paper, the Expatriation Act of 1907 punished intermarriages and restricted women’s freedom of marriage. In fact, gender inequality started to decline in the early twentieth century, with the woman suffrage movement (Cott, 1998) and the rise in female labor force participation (Olivetti, 2013); however, the Expatriation Act of 1907 moved in an opposite direction.

Second, understanding the effect of immigration laws on the marriage pattern has useful implications from labor market perspectives. Scholars find that relaxed immigration poli-
cies in the U.S. in recent decades—such as IRCA (Rivera-Batiz, 1999; Phillips and Massey, 1999), TPS (Orrenius and Zavodny, 2015), and DACA (Pope, 2016)—have positive labor market effects. The Expatriation Act of 1907 might generate negative labor market effects through its impacts on marriage patterns: First, the Act did not allow male aliens to acquire citizenship through marriage, which might lead to a decrease in the supply of immigrant labor. This could further affect the economy, as immigration had positive impacts on economic growth in the early twentieth century U.S. (Hatton and Williamson, 1999). Second, prior research shows the positive correlation between citizenship status and socioeconomic status in both the U.S. (Bratsberg et al., 2002; Mazzolari, 2009) and Europe (Forgère and Safi, 2009; Steinhardt, 2012; Avitabile et al., 2013). Hence, the Expatriation Act of 1907 might cause labor market penalties for women’s intermarriages.

Finally, estimating the effect of marriage restrictions is the first step toward understanding the economic impacts of marriage patterns for both individual (e.g., Meng and Gregory, 2005; Meng and Meurs, 2009; Ciscato and Weber, 2020) and society (e.g., Foreman-Peck, 2011; Foreman-Peck and Zhou, 2018). Prior studies mainly focus on how economic conditions shape marriage patterns (Cvrcék, 2012; Carlana and Tabellini, 2019); this paper sheds light on this topic from a new perspective: the role of immigration laws.

In this paper, I show empirical evidence of downward trends in intermarriage among U.S. women with birthright citizenship (hereinafter referred to as “female citizens”) after the Expatriation Act was enacted in 1907. The intermarriage rate was fairly stable before 1907; afterwards, there was a sharp decline in intermarriage. Specifically, I find that the Expatriation Act of 1907 did not affect marriage with foreign-born (naturalized) citizens; relatedly, after excluding native-born couples (i.e., conditional on marrying foreign-born men), I find that female citizens’ downward trends in marriage with aliens—in contrast to naturalized citizens—were still significant. These results suggest the effect of the Expatriation Act of 1907 on intermarriage should be mainly associated with women’s concerns about loss of citizenship, but not anti-immigration attitudes in the marriage market.
I further discuss the main results in a series of additional tests. First, the socioeconomic causes and consequences of intermarriage is an important topic in marriage studies, and researchers find mixed results (e.g., Fu, 2001; Okun, 2004; Chiswick, 2009; Furtado and Theodoropoulos, 2011). I show that the Expatriation Act was not associated with the relationship between intermarriages and socioeconomic status. Second, using census data from other countries, I present evidence that U.S. women’s labor force participation (Olivetti, 2013); remarriage (Qian and Lichter, 2018), and emigration (Ward, 2017) cannot explain the downward trends in intermarriage. Third, I present a series of robustness checks and tests on heterogeneous effects.

The rest of this paper is organized as follows. Section 2 introduces the background. Section 3 discusses data and methods. Section 4 reports the results. Section 5 concludes.

## 2 Historical Background

The U.S. absorbed nearly 30 million immigrants (Abramitzky and Boustan, 2017) during the mid-nineteenth and early twentieth century (i.e., “age of mass migration”). Most immigrants were from Europe, although there were also some immigrants from Asia, Canada, Latin America, and other regions. Mass immigration contributed to a significant proportion of U.S. population growth in the late nineteenth and early twentieth century (Haines, 2000; Hirschman, 2005). In 1910, the share of the foreign-born population in the U.S. was nearly 15%, reaching its peak in the history from 1790 to the present. In the early twentieth century, more than half of immigrants were male, which brought labor force and, theoretically, marriageable men to the U.S. (Carlana and Tabellini, 2019).

Many immigrants were economically successful after arrival (Abramitzky et al., 2014) and contributed to the U.S. economy (Hatton, 1998). Specifically, immigration has both short-run and long-run positive effects on a variety of social and economic outcomes, such as higher earnings, lower poverty and unemployment rates, higher urbanization rates, and
greater educational attainment (Sequeira et al., 2020). Despite immigrants’ pivotal role in economic growth, anti-immigration populism was strong in the early twentieth century: the native-born population feared that new immigrants would take up their jobs (Goldin, 1994) and were culturally different (Tabellini, 2020), and believed that immigration should be severely limited (Ngai, 1999).

On the other hand, ironically, many natives were unhappy about the fact that some immigrants only sought temporary migration and departed the U.S. soon after arrival (Ward, 2017), making no efforts to assimilate (Ngai, 2004). Indeed, return migration was common: Bandiera et al. (2013) estimate that the emigration rate was around 0.6 in the early twentieth century. In fact, some immigrants might never plan to settle down: while the U.S. only required 5-year residence for naturalization (Newman, 1998), the average number of years between arrival and naturalization was more than 20 years. Indeed, data on the 1920 U.S. census (Ruggles et al., 2019)—the first U.S. census that surveyed the year of naturalization—show that in the immigrant stock, there were nearly 4 million immigrants who moved to the U.S. during the 1890s and later became eligible for naturalization, but only about 1 million of them were naturalized citizens.

In sum, although immigrants actually brought economic benefits by providing labor force (Bandiera et al., 2013; Sequeira et al., 2020) and promoting cultural diversity (Ager and Brückner, 2013), there was strong political opposition to immigration (Tabellini, 2020) and, as a result, a series of immigration restriction laws were enacted during the 1880s to the 1920s U.S., such as the Chinese Exclusion Act of 1882 and 1892, Naturalization Act of 1906 (English requirement act), Immigration Act of 1907 (health requirement act), Asiatic Barred Zone Act of 1917, and the quota-based Immigration Act of 1921 and 1924. Ethnic discrimination in the U.S. was also common throughout the age of mass migration (e.g., Goldin, 1994; Hatton, 1998; Haines, 2000; Ngai, 2004; Moser, 2012; Fouka, 2019).

Among all immigration restriction laws, the Expatriation Act of 1907 was somewhat different: unlike other laws, it did not target the foreign-born population who had already
resided in or planned to move to the U.S.; instead, it restricted the right of female citizens who married aliens by depriving their U.S. citizenship. Although intermarriage laws almost always lead to fierce debates (Fryer, 2007), the Expatriation Act of 1907 did not immediately cause controversy. One main reason is that immigrants were fairly exclusive and intermarriages between natives and immigrants were less common in the early twentieth century (Krause, 1978; Peach, 1980; Pagnini and Morgan, 1990; Rogin, 1992; Wildsmith et al., 2003; Sassler, 2005; Logan and Shin, 2012), and thus a law that restricted intermarriage did not draw the native-born population’s attention. In fact, Carlana and Tabellini (2018) show that although immigration raised marriage rates, it was mainly because immigration positively affected native-born men’s labor market outcomes, which further increased the supply of marriageable native-born men. Another related reason is that the Expatriation Act of 1907 only restricted female citizens: male citizens were not affected, and their alien spouses could still acquire U.S. citizenship through marriage.

Indeed, as both a marriage act and an immigration act, the Expatriation Act of 1907 had two-fold social impacts: on one hand, it moved in a “negative direction” in an era of declining gender inequality, with the woman suffrage movement (Cott, 1998) and the rise in female labor force participation (Olivetti, 2013) in the U.S.; on the other hand, it indeed attempted to restrict immigrants in a nation with strong anti-immigration populism. As a result, the Expatriation Act of 1907 did not appear to be controversial at that time, despite the fact that it violated the freedom of marriage (Tsiang, 1942).

People started to understand the implications of the Act only a few years later, when an increasing number of states started to grant the vote to women, and some native-born wives of aliens were not eligible to vote because of their loss of U.S. citizenship under the Expatriation Act (Sarat and Kearns, 1996). After a number of protests and movements in the 1910s, the Cable Act of 1922 finally reversed the Expatriation Act of 1907 (Gardner, 2005): it guaranteed independent female citizenship to women who married aliens. However, an exception was that women who married Asians still lost their citizenship (Asian
immigrants were not eligible for naturalization under the Asiatic Barred Zone Act of 1917). In other words, the Expatriation Act of 1907 was only partially reversed.

3 Data and Methods

The analysis sample of this paper is the IPUMS 1% sample of 1910 U.S. census data (Ruggles et al., 2019). I use the 1% sample as the key marriage variable—the number of times married—is coded only at the 1% sample level. I only include native-born women in the analysis sample, as the 1910 census did not survey women’s citizenship and only birthright citizenship can be perfectly identified. Moreover, to better compare the intermarriage pattern before and after the passage of the Expatriation Act, I focus only on women who married after 1900 in the analysis sample. The unit of observation in the sample is individual woman, but the husband’s information are also included in each observation. I do not restrict the sample by first marriage, but most specifications in the empirical analysis will be based on the sample of women who married only once.

There are two major advantages of using 1910 U.S. census data. First, the 1910 census was the second and last census that surveyed the duration of current marriage in the early twentieth century U.S. This makes it possible to determine the year of marriage. Second, before 1940, the 1910 census was the only census that surveyed the number of times of marriage, which helps determine first marriage for the analysis. Similar to other pre-1940 U.S. censuses, the 1910 census asked questions about nativity, country of origin, citizenship status, occupation, etc. but did not survey individuals’ income.

Table 1 presents descriptive statistics. In Panel A, I first focus on basic variables. In the analysis sample, women’s average age was nearly 28, 4 years younger than their husbands. 86.3% of women were white, and 91.2% of women could read and write. Only 12.2% of women were in the labor force; conditional on labor force participation, the employment rate was 94.4%. 98.2% of husbands were in the labor force and the employment rate was
Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. dev.</th>
<th>Mean</th>
<th>Std. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wife variables</td>
<td>Husband variables</td>
<td>Wife variables</td>
<td>Husband variables</td>
</tr>
<tr>
<td>A. Basic variables:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>27.772</td>
<td>(7.688)</td>
<td>32.187</td>
<td>(9.005)</td>
</tr>
<tr>
<td>White</td>
<td>0.863</td>
<td>(0.343)</td>
<td>0.831</td>
<td>(0.374)</td>
</tr>
<tr>
<td>Literate (read &amp; write)</td>
<td>0.912</td>
<td>(0.284)</td>
<td>0.872</td>
<td>(0.334)</td>
</tr>
<tr>
<td>Being in labor force</td>
<td>0.122</td>
<td>(0.334)</td>
<td>0.982</td>
<td>(0.132)</td>
</tr>
<tr>
<td>Being employed</td>
<td>0.944</td>
<td>(0.229)</td>
<td>0.949</td>
<td>(0.221)</td>
</tr>
<tr>
<td>Occupational score</td>
<td>11.149</td>
<td>(9.022)</td>
<td>22.265</td>
<td>(10.976)</td>
</tr>
<tr>
<td>Urban status</td>
<td>0.476</td>
<td>(0.499)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm status</td>
<td>0.272</td>
<td>(0.445)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Marriage variables:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at current marriage</td>
<td>23.450</td>
<td>(7.334)</td>
<td>27.849</td>
<td>(8.678)</td>
</tr>
<tr>
<td>Times married</td>
<td>1.416</td>
<td>(1.558)</td>
<td>1.419</td>
<td>(1.501)</td>
</tr>
<tr>
<td>First marriage</td>
<td>0.895</td>
<td>(0.306)</td>
<td>0.869</td>
<td>(0.336)</td>
</tr>
<tr>
<td>Duration of marriage (years)</td>
<td>4.322</td>
<td>(2.734)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married, but husband absent</td>
<td>0.045</td>
<td>(0.207)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign-born husband</td>
<td>0.112</td>
<td>(0.316)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband’s year since arrival</td>
<td>14.048</td>
<td>(10.090)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband alien (non-citizen)</td>
<td>0.068</td>
<td>(0.252)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Observations: 72,978. The sample only includes women who married after 1900.

94.9%. The 1910 census did not survey individuals’ income; the U.S. census started to survey individuals’ income only in 1940. IPUMS employs Sobek’s (1996) construction of occupational scores for estimating occupation-based earnings for historical census data based on 1950 census data and this variable is widely used in economic history (e.g., Abramitzky et al., 2014). In general, husbands earned much more than their wives conditional on being employed. Finally, 47.6% of couples in the sample lived in urban areas and 27.2% of couples owned farms.

In Panel B, I study marriage-related variables. Women’s average age at current marriage was 23.45, again 4 years younger than their husbands. On average, the number of times of marriage was approximately 1.4 for both women and men, but divorces and remarriages

Please see the details of the construction of occupational scores on IPUMS (https://usa.ipums.org/usa-action/variables/OCCSCORE#description_section) Ruggles et al., 2019): “(The variable of occupational scores) assigns each occupation in all years a value representing the median total income in hundreds of 1950 dollars of all persons with that particular occupation in 1950.”
were generally uncommon at that time: almost 90% of women were in their first marriage in 1910. In the sample, 11.2% of women married foreign-born husbands, which was significantly lower than the share of the foreign-born population (15% for the full population; 17% for the male population) as homogamy was the mainstream at that time (Pagnini and Morgan, 1990). On average, foreign-born husbands had resided in the U.S. for 14 years. By 1910, 6.8% of husbands in the sample were still aliens (i.e., not U.S. citizens).

A disadvantage of 1910 U.S. census data is that the 1910 census did not ask the year of naturalization for foreign-born citizens. Hence, I cannot determine whether a foreign-born man had been naturalized when he married a female citizen. One way to study this is to explore “bounds” of citizenship status. On one hand, considering all citizens by 1910 citizenship status overestimates the citizen population (some immigrants might be naturalized after marriage), but yields an upper bound for the citizen population. On the other hand, considering all foreign-born men as aliens underestimates the citizen population (some immigrants might be naturalized after arrival but before marriage), but yields a lower bound for the citizen population. In the empirical analysis, I use both ways to construct the variable of intermarriage and find similar results.

The main empirical specification builds on a linear probability model. Here, I denote \( I_{isy} \) as a binary indicator of intermarriage (e.g., marrying a foreign-born spouse or marrying an alien), where \( i \) indexes individual, \( s \) indexes state of residence, and \( y \) indexes year of marriage. I run the following OLS regression:

\[
I_{isy} = \alpha + \sum_t \beta_t 1(y - 1907 = t, t \neq 0) + X_{isy} \gamma + \tau_s + \varepsilon_{isy} \quad (1)
\]

The key variables of interest are year-of-marriage fixed effects, where 1907 (the year when the Expatriation Act was enacted) is omitted. \( X_{isy} \) is a vector of covariates introduced earlier, and \( \tau_s \) are state fixed effects. Essentially, this is an event-study framework that obtains year-wise first-difference estimators (\( \beta_t \)). I cluster standard errors at the state level.
There are three technical points worth noting. First, a key identification assumption is that the pattern of intermarriage among female citizens in the U.S. should remain stable in the absence of the Expatriation Act of 1907. If so, then pre-trends in intermarriage should be insignificant so that marrying foreign-born men or aliens should follow stable trends, and the insignificant pre-Act coefficients ($\{\beta_t\}, t < 0$) would provide supporting evidence for causal interpretation.

Second, Equation 1 is a first-difference model. The standard difference-in-differences model should involve married men in the sample and compare the pattern of intermarriage between male and female citizens before and after 1907. However, as each observation contains information on the couple (and not only individual), estimating a difference-in-differences model in a sample of both males and females means that non-alien couples (i.e., both the husband and wife are citizens) are double counted.

Third, as the dependent variable (intermarriage status) is a binary variable, it is useful to consider non-linear regression models to check the robustness of OLS estimates. I run a logit model similarly within an event-study framework and report odds ratio by year. Logit results are qualitatively identical to the OLS estimates.

4 Results

4.1 Main Results

In Figure 1, I visualize event-year estimates from the main specifications described in Equation 1 (numbers are reported in Table 2). In Figure 1(a), the dependent variable is a binary indicator of marriage with an alien (by 1910 citizenship status). I restrict the sample to couples that had married only once (first marriage). Results show that trends in intermarriage among female citizens remained fairly stable before the Expatriation Act was enacted; afterwards, female citizens became significantly less likely to marry aliens. In Figure 1(b), the dependent variable is an indicator of marriage with a foreign-born man. I observe simi-
Figure 1: The Effect of the Expatriation Act: (a) Marriage with Aliens (Citizenship Status by 1910); (b) Marriage with Foreigner (by Birth)

Figure 2: Logit Regression Results: (a) Marriage with Aliens (Citizenship Status by 1910); (b) Marriage with Foreigner (by Birth)

lar results: the Expatriation Act led to downward trends in marriage with foreign-born men among female citizens after 1907. Note that the effect size appears to be smaller in Figure 1(b). As discussed earlier, Figure 1(a) and 1(b) use different dependent variables that represent the bounds of the citizen population, which potentially reflect the bounds of the estimated effect of the Expatriation Act.

I replicate the above analysis using a logit regression in Figure 2. In two sub-figures, I report year-wise odds ratio of the effect of the Expatriation Act on women’s marriage with aliens (citizenship status by 1910) and foreign-born husbands, respectively. Figure 2 presents the same qualitative pattern as Figure 1: women’s intermarriage pattern was fairly stable prior to the passage of the Expatriation Act in 1907; afterwards, there was a shape
decline in the likelihood of citizenship-based intermarriage.

In Table 2, I report event-study estimates presented in Figure 1 (in columns 1 and 4). The full set of controls and state fixed effects are included in all regressions, but are not reported for simplicity. In columns 2 and 3, I follow column 1 (as well as Figure 1(a)) and conduct two additional tests. In column 2, I cluster standard errors at the year-of-marriage level and observe similar pre-trends and post-trends. In column 3, I include women who married more than once. Although divorces and remarriages were rare at that time, one might still be concerned that the number of times married could drive the results. I find that the effect size indeed becomes smaller, but the general pattern appears to be similar. I will revisit the issue of remarriage in the latter part of this section. While not reported here, I conduct same tests for column 4’s regression and find similar results.

The above figures and tables show that the magnitude of the effect of the Expatriation Act on intermarriage appears to be fairly large: depending on the measure of foreigners, the magnitude of the decline in intermarriage after 1907 was 1 to 1.5 percentage points, or 10% to 20% (compared to the numbers in Table 1).

Note that although the share of alien husbands (by 1910 status) was lower than the share of foreign-born husbands, the effect size appears to be larger when I use the indicator of marrying an alien (by 1910 status) as the dependent variable (Figure 1(a) v.s. Figure 1(b), and column 1 v.s. column 4 shown in Table 2). This is plausible only if women had different preferences between marrying aliens and immigrants, which leads to a further question: were downward trends in intermarriage only related to potential loss of citizenship, or such trends actually reflect anti-immigration attitudes?

I examine the above question in columns 5 and 6, Table 2. In column 5, I run a similar regression where I use an indicator of marrying a non-citizen (by 1910 status) as the dependent variable and restrict the sample to female citizens who married foreign-born husbands. Column 5’s result is similar to that reported in earlier columns, suggesting that citizenship status still mattered even conditional on native-immigrant marriage. In column 6, I focus
<table>
<thead>
<tr>
<th>Year after the Act:</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
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<td>[y = -6]</td>
<td>0.0021</td>
<td>0.0021</td>
<td>0.0008</td>
<td>0.0022</td>
<td>-0.0007</td>
<td>0.0140*</td>
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<td></td>
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<td>(0.0060)</td>
<td>(0.0072)</td>
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<td>(0.0075)</td>
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<td>0.0012</td>
<td>0.0030</td>
<td>0.0017</td>
<td>0.0004</td>
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<tr>
<td></td>
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<td>(0.0018)</td>
<td>(0.0052)</td>
<td>(0.0061)</td>
<td>(0.0022)</td>
<td>(0.0069)</td>
</tr>
<tr>
<td>[y = -4]</td>
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<td>0.0022</td>
<td>0.0044</td>
<td>0.0020</td>
<td>0.0006</td>
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<td></td>
<td>(0.0044)</td>
<td>(0.0014)</td>
<td>(0.0042)</td>
<td>(0.0043)</td>
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<td>(0.0056)</td>
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<tr>
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<td>0.0069***</td>
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<td>0.0069</td>
<td>0.0013</td>
<td>0.0091</td>
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<td>(0.0059)</td>
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<td>0.0073*</td>
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<td>(0.0063)</td>
<td>(0.0053)</td>
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<tr>
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<td>-0.0084***</td>
<td>-0.0095*</td>
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<td>(0.0054)</td>
<td>(0.0034)</td>
<td>(0.0055)</td>
</tr>
<tr>
<td>[y = 2]</td>
<td>-0.0148**</td>
<td>-0.0148***</td>
<td>-0.0108*</td>
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<tr>
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<td>(0.0072)</td>
<td>(0.0008)</td>
<td>(0.0072)</td>
<td>(0.0065)</td>
<td>(0.0052)</td>
<td>(0.0050)</td>
</tr>
<tr>
<td>[y = 3]</td>
<td>-0.0181**</td>
<td>0.0181***</td>
<td>-0.0145**</td>
<td>-0.0142**</td>
<td>-0.0196***</td>
<td>-0.0054</td>
</tr>
<tr>
<td></td>
<td>(0.0068)</td>
<td>(0.0011)</td>
<td>(0.0062)</td>
<td>(0.0064)</td>
<td>(0.0046)</td>
<td>(0.0054)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model/sample</th>
<th>First marriage \ s.e.: state</th>
<th>First marriage \ s.e.: yr. mar.</th>
<th>All women s.e. (Column 3-6): state</th>
<th>First marriage \ s.e.: state</th>
<th>Spouse fgn., first marriage</th>
<th>Spouse ctz., first marriage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>State FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Figure info.</td>
<td>Figure 1(a)</td>
<td>Figure 1(b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.153</td>
<td>0.153</td>
<td>0.153</td>
<td>0.154</td>
<td>0.025</td>
<td>0.103</td>
</tr>
<tr>
<td>Observations</td>
<td>60.181</td>
<td>60.181</td>
<td>69.702</td>
<td>60.181</td>
<td>11.976</td>
<td>54.895</td>
</tr>
</tbody>
</table>

Standard errors are in parentheses. *: \( p < .1 \); **: \( p < .05 \); ***: \( p < .01 \). Standard errors are clustered at the state level in Column 1 and 3-6; clustered at the year of marriage level in Column 2. Column 1: Regress the indicator of marrying an alien (1910 status). First marriage. Columns 2 & 3 follow Column 1. Column 2: Different clustering level; Column 3: All women (could marry more than once). Column 4: Regress the indicator of marrying a foreign-born spouse. First marriage. Column 5: Regress the indicator of marrying an alien (1910 status), conditional on foreign-born spouse. First marriage. Column 6: Regress the indicator of marrying a foreign-born spouse, conditional on citizen spouse (1910 status). First marriage.

on the sample of female citizens whose husbands were citizens in 1910 and run a regression where the dependent variable is an indicator of marriage with a foreign-born husband. Column 6 presents completely different results compared with column 5: although negative, none of the post-Act coefficients are significant. This implies that conditional on marrying a citizen, nativity did not play a major role in the marriage market. Of course, the above results should be interpreted with caution given that husbands’ citizenship status might not be perfectly identified. However, columns 5 and 6 still provide some evidence that husbands’ citizenship status was a more crucial issue than husbands’ nativity for female citizens. In other words, while anti-immigration populism was strong in the U.S. at that time, the effect of the Expatriation Act should be primarily associated with women’s concerns about loss...
I conclude the main empirical analysis by studying the relationship between intermarriage and socioeconomic status of the couples. Prior studies show mixed results of effects of intermarriage on socioeconomic outcomes in other contexts. For example, Fu (2001) finds that white-Mexican and white-black couples experience racial status hierarchy disadvantages in the U.S., but there are no impacts of intermarriage for white-Asian couples. Similarly, Okun (2004) finds no effects of intermarriage on socioeconomic outcomes in Israel. Related to the Expatriation Act of 1907, a further question is whether the Expatriation Act changed the relationship between intermarriage and socioeconomic status after it was enacted. I study this question in Figure 3.

To do so, I run two difference-in-differences regressions: here, the first dimension of difference is the time before and after the Expatriation Act was enacted in 1907; the second dimension of difference is whether a woman married a foreign-born spouse. In Figure 3(a), I examine whether the wives joined the labor force. The number of women in labor force in the early twentieth century was relatively low but was gradually increasing (Olivetti, 2013). Results suggest that the Expatriation Act did not significantly affect the relationship between intermarriage and female labor force participation. In Figure 3(b), I study husbands’ occupational scores. I find positive point estimates of the effects on hus-
bands’ occupation-based earnings among intermarried couples, but none of the coefficients are significant. Note that in Figure 3, I use nativity to define intermarriage (foreign-born husbands); using citizenship status in 1910 to define intermarriage leads to similar results.

### 4.2 Additional Tests

I now conduct several additional tests and discuss the robustness of the main results. In Figure 4, I follow the main specification but use the number of times of marriage and the indicator of female labor force participation as dependent variables. These two regressions study two possible confounding factors: can trends in remarriage and female labor force participation explain the downward trends in intermarriage?

I first focus on the number of times of marriage in Figure 4(a). Landale and Tolnay (1993) find that marriage patterns changed in the early twentieth century U.S. in terms of marital timing, mainly due to regional economic factors. More relatedly, Qian and Lichter (2018) find that remarriage might reflect women’s disadvantages in the marriage market. Hence, the effect of the Expatriation Act on intermarriage in the sample of all women might be confounded by remarriage. To study this, I estimate the effect of the Expatriation Act on the number of times of marriage. Although I find the significant point estimate for the second year after the passage of the Expatriation Act, the general pattern of the Act’s effect on the number of times of marriage is less clear, and remarriage is unlikely to explain the main results of this paper.

I run a similar regression on female labor force participation in Figure 4(b). Female labor force participation was low but increasing in the early twentieth century (Olivetti, 2013), and women in the labor force might have different marital preferences. Figure 4(b) shows that the Expatriation Act of 1907 did not affect female labor force participation, and women’s labor market outcomes should not drive the main results.

Another possible mechanism is emigration. If most intermarried women departed the U.S. with their alien husbands, then the effect observed in the main analysis might actually
Table 3: Emigration of U.S.-Born Women

<table>
<thead>
<tr>
<th></th>
<th>Number of U.S.-born women</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Canada</td>
<td>Norway</td>
<td>U.K.</td>
<td>Sweden</td>
</tr>
<tr>
<td>1900/1901</td>
<td>59,240</td>
<td>1,851</td>
<td>9,580</td>
<td>2,729</td>
</tr>
<tr>
<td>(00: NO/SE)</td>
<td>(24,160)</td>
<td>(146)</td>
<td>(2,956)</td>
<td>(162)</td>
</tr>
<tr>
<td>(01: CA/UK)</td>
<td>[12,860]</td>
<td>[99]</td>
<td>[1,858]</td>
<td>[146]</td>
</tr>
<tr>
<td>1910/1911</td>
<td>140,340</td>
<td>2,853</td>
<td>21,257</td>
<td>3,902</td>
</tr>
<tr>
<td>(10: NO/SE)</td>
<td>(59,970)</td>
<td>(283)</td>
<td>(8,932)</td>
<td>(404)</td>
</tr>
<tr>
<td>(11: CA/UK)</td>
<td>[18,520]</td>
<td>[235]</td>
<td>[5,871]</td>
<td>[371]</td>
</tr>
</tbody>
</table>

Brackets: numbers of U.S.-born women with local husbands.
Canada: only 5% samples are available; numbers are thus estimated.

reflect selection on emigration for family reasons, but not necessarily trends in intermarriage. To examine this, I exploit 1901/1911 Canadian and U.K. census data and 1900/1910 Norwegian and Swedish census data (Minnesota Population Center, 2018) and count the number of U.S.-born female immigrants who migrated to these countries. Unfortunately, only census data from these four countries are available, but the analysis based on these countries is still informative, as they were major sending countries of U.S. immigrants and their immigrants consisted of one third of the entire U.S. immigrant population in 1900.²

Table 3 presents the descriptive findings.³ Results show that the increase in migrant

²The 1900 U.S. census (Ruggles et al., 2019) recorded that there were 10,527,270 people who were born outside the U.S.; 1,229,924 were born in Canada, 340,602 were born in Norway, 1,182,209 were born in the U.K. (not including Ireland), and 585,871 were born in Sweden.
³Numbers for Canada are estimated based on 5% samples (as 1901 and 1911 Canadian census data are only available at the 5% level); numbers for other three countries are based on full-count samples.
Table 4: U.S.-Born Women’s Emigration to Canada (Estimation)

<table>
<thead>
<tr>
<th>Year of arrival</th>
<th>All women</th>
<th>Married</th>
<th>Married with Canadian</th>
<th>All men</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>3,740</td>
<td>1,580</td>
<td>520</td>
<td>1,240</td>
</tr>
<tr>
<td>1902</td>
<td>4,780</td>
<td>1,960</td>
<td>460</td>
<td>1,980</td>
</tr>
<tr>
<td>1903</td>
<td>6,040</td>
<td>2,480</td>
<td>520</td>
<td>2,560</td>
</tr>
<tr>
<td>1904</td>
<td>5,640</td>
<td>2,380</td>
<td>580</td>
<td>2,200</td>
</tr>
<tr>
<td>1905</td>
<td>7,100</td>
<td>2,860</td>
<td>740</td>
<td>3,000</td>
</tr>
<tr>
<td>1906</td>
<td>8,560</td>
<td>3,680</td>
<td>820</td>
<td>3,760</td>
</tr>
<tr>
<td>1907</td>
<td>9,040</td>
<td>3,460</td>
<td>640</td>
<td>3,120</td>
</tr>
<tr>
<td>1908</td>
<td>8,160</td>
<td>3,540</td>
<td>460</td>
<td>3,120</td>
</tr>
<tr>
<td>1909</td>
<td>12,260</td>
<td>4,520</td>
<td>720</td>
<td>4,760</td>
</tr>
<tr>
<td>1910</td>
<td>17,000</td>
<td>7,000</td>
<td>760</td>
<td>7,080</td>
</tr>
</tbody>
</table>

1911 Canada census: only 5% samples are available; numbers are thus estimated.

Figure 5: Placebo Tests: Expatriation Acts in 1902 and 1904

U.S.-born women—especially those who married the local citizens—was fairly small, and it is unlikely that the majority of intermarried U.S. women left the U.S. In Table 4, I present a more direct check using data on the 1911 Canadian census that surveyed the year of immigration to Canada (other censuses did not survey this question). I find no significant rise in the number of migrant U.S.-born women who married Canadians after the Expatriation Act of 1907 was enacted in the U.S. Moreover, while there was indeed an increase in the number of U.S.-born women who moved to Canada after 1907 (regardless of marital status), it was probably related to general migration flows from the U.S. to Canada at that time, as many U.S.-born men also moved to Canada after 1907.

In Figure 5 and 6, I conduct a number of placebo tests to check the robustness of the main empirical conclusion. In Figure 5, I assume that the Expatriation Act was enacted
in 1902 and 1904 and estimate the effects of two “placebo Acts” on intermarriage before the actual Expatriation Act came into effect. Any significant estimates of placebo effects might indicate other factors affecting trends in intermarriage. Figure 5 shows no evidence that these placebo Acts had any significant effects on women’s marriage with foreign-born spouses. While not reported here, I observe very similar results when using an indicator of marriage with aliens as dependent variables in placebo tests.

In Figure 6, I further conduct placebo tests by assuming that the Expatriation Act was enacted in some other years between 1901 and 1907. In each placebo year, I only run a regression for a simple before-after estimator (i.e., comparing women’s intermarriage pattern before and after the passage of the Act). I then plot the sizes of the effect by year in Figure 6. In theory, one should observe the largest (negative) effect size for 1907, as 1907 was the year when the Expatriation Act was actually enacted. Figure 6 indeed shows that the effects on either marrying aliens (citizenship status by 1910) or foreign-born spouses appear to be largest for the 1907-Act specification.

### 4.3 Heterogeneous Effects

I conclude the empirical section by discussing heterogeneous effects of the Expatriation Act. In Figure 7, I analyze the effect of the Expatriation Act on women’s intermarriage
Figure 7: Heterogeneous Effects by Region: Intermarriage with Aliens in (a) States in the Eastern U.S.; (b) States in the Central U.S.; (c) States in the Western U.S.; (d) Urban Areas with alien husbands in states in the Eastern, Central, and Western U.S., respectively. I find that the effect of the Expatriation Act was mainly concentrated in the Eastern and Central U.S.; while the rate of intermarriage was similar in Western states, I find no significant effect of the Expatriation Act on women’s intermarriage pattern in the American West.

Figure 7(d) studies intermarriage with aliens in urban areas. As the majority of U.S. immigrants resided in cities, the rate of intermarriage with aliens was substantially higher in urban areas. Figure 7(d) shows that there was indeed a sharp decline in trends in marriage with aliens in cities. I repeat the exercise in Figure 8, in which I estimate the effect of the Expatriation Act on intermarriage in rural areas in Figure 8(a) and farms in Figure 8(b). Figure 8 shows that, despite the fact that there were much fewer intermarriage cases outside cities, there was still a decline in female citizens’ intermarriage in rural America.

I conclude the discussion on heterogeneous effects by family immigration history. While
Table 1 shows that marrying immigrants was not rare among American women, intermarriages were disproportionately common among second-generation immigrants, especially those of non-Anglophone origins (e.g., Germany, Russia). Consistent with historical findings (e.g., Logan and Shin, 2012), 1910 census data show that the intermarriage rate among women who were not second-generation immigrants or were of Anglophone origins was only approximately 1%. Hence, the effect of the Expatriation Act should be mainly concentrated among second-generation immigrants whose parents moved to the U.S. from non-Anglophone countries.

Figure 9 presents the results. Figure 9(a) shows that the Expatriation Act led to a significant decline in marriage with aliens among second-generation immigrants. Moreover,
Figure 9(b) shows that the Expatriation Act generated a larger effect on second-generation immigrants of non-Anglophone origins. While not reported here, I find no significant effects of the Expatriation Act on the pattern of intermarriage among women who were children of native-born parents or whose parents were from Anglophone countries.

5 Conclusion

The Expatriation Act of 1907 stated that U.S. women who married aliens would lose their U.S. citizenship. In this paper, I use 1910 U.S. census data (Ruggles et al., 2019) to study the effect of the Expatriation Act of 1907 on U.S. women’s pattern of intermarriage in the early twentieth century. I estimate the effect of the Expatriation Act on marriage with foreign-born spouses and marriage with alien spouses by 1910 citizenship status, which roughly reflect the bounds of intermarriage at the time of marriage.

Using a linear probability model and a logit model within an event-study framework, I find that the pattern of intermarriage among U.S. women was fairly stable before the Expatriation Act was enacted in 1907; afterwords, U.S. women became significantly less likely to marry immigrants, and aliens in particular. Moreover, I show evidence that such downward trends in intermarriage should be mainly associated with U.S. women’s concerns about loss of citizenship, but not anti-immigration attitudes, and U.S. women’s remarriage, labor force participation, and emigration cannot explain the main results.

A potential future research direction is about the data limitation of this paper: the lack of information on years of naturalization among immigrants. This limitation can be partially solved with the effective linkage of 1910 and 1920 U.S. census data, as the 1920 census surveyed years of naturalization. On the other hand, linking data on two censuses might cause other data issues, such as remarriage, emigration, and mortality during the 1910s. Ideally, these issues can be tackled based on further data linkage projects with marriage documents, death certificates, and other countries’ census records, but some of these data
might not be currently available or even exist. As this involves a much larger data project, I leave the related discussion to future research.

Another future research direction involves the estimation of other immigration acts on the marriage pattern in the contemporary society. A number of relaxed immigration acts have been passed in recent decades in the U.S., such as IRCA and DACA. Will these acts lead to an increase in intermarriage? More broadly, there have been switches between anti-immigration and pro-immigration politicians across elections. Will the changes in attitudes towards immigration similarly lead to changes in the marriage pattern? These questions are worth further investigation.

References


