Two Essays on the Interaction between Marriage and Policy

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Boston College The Graduate School of Arts and Sciences
Department of Economics

TWO ESSAYS ON THE INTERACTION BETWEEN MARRIAGE AND POLICY

A dissertation

by

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for the degree of

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TWO ESSAYS ON THE INTERACTION BETWEEN MARRIAGE AND POLICY

ABSTRACT

by

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This dissertation explores the interaction of government policy and marital decisions.

In the first chapter, I estimate the effect a Vietnam War era marriage deferment on marriage rates of men eligible for the draft. Previous studies often find that in the United States government policies that alter marital incentives have small or insignificant effects on marriage. These results may be the product of weak incentives. To test this, I study a policy with stronger incentives -- the Vietnam War marriage deferments. I find that the marriage deferments accelerated the timing of marriage for draft eligible men, for instance, increasing the probability of marriage at age 21 by 15%. I also find that it induced marginal marriages, marriages that would not have occurred without the deferment, increasing the probability of marrying by age 30 by 1%. These results indicate that marital decisions can be responsive to government policies but only if the incentives are quite large. In addition, I find that those exposed to the marriage deferment had a 1% lower probability of divorce, suggesting that policy induced marriages may not necessarily be more likely to end in divorce.

In the second chapter, I describe the characteristics of spousal immigrants, how they compare to other immigrants and how they contribute to the distribution of new legal permanent residents. In 2012, 48% of all new legal permanent residents obtained green cards through marriage. Yet, very little is known about these spousal immigrants and how they influence the overall distribution of new immigrants. In this chapter, I explore the characteristics of spousal immigrants, how they compare to the characteristics of their spouses and the importance of accounting for spousal immigrants when considering changes to immigration policy. I find that there is a lot of variation in the characteristics of spousal immigrants, but that they are very similar to their spouses across the dimensions of age, education, and nationality. This implies that any changes to immigration law that alter the characteristics of principals will be amplified by the changes in the characteristics of their spouses.
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1 Chapter

Spousal Immigrants:
Who Marries Into the United States?
1 Introduction

The Immigration Act of 1965 transformed U.S. immigration policy by replacing country-specific quotas with a rationing system that emphasized family unification. Since then policy makers and academics alike have debated the merits of family-preference immigration.\(^1\) Many have argued that the emphasis on kinship results in a relatively large proportion of new immigrants with low skills. Policy makers have repeatedly attempted to remedy this by altering the selection mechanism for new immigrants. Specifically, the last three immigration reform bills have attempted to implement a point system, under which immigrants would be selected based on education, experience, language skills and age.\(^2\) Under the current system, only 10\% of all new legal permanent residents are subject to any educational or experience requirements.\(^3\) The requirements for the remaining 90\% are solely based on family ties, through either blood or marriage. While parents, siblings, children and spouses are often lumped together into the category of “family-based” immigrants, unlike other family-based immigrants spouses are selected through a marriage market. A priori, it is unclear that the characteristics of spousal immigrants will be the same as parent, sibling or children immigrants. This paper will describe the characteristics of spousal immigrants, compared to other immigrants, compared to the spouses who sponsor them and across admissions category. Additionally, this paper will explore their role in the impact of policy changes on immigrant characteristics by conducting counterfactual exercises of potential policies.

As seen in Figure 1 below, spousal immigrants make up approximately 48\% of all new legal permanent residents. Given that they comprise such a large percentage, they have a substantial influence over the distribution of new immigrant characteristics. Yet, there has been very little research describing their overall characteristics or how they contribute to the distribution of new legal permanent residents.

This paper will expand on this literature, in two ways, by identifying the characteristics of all spousal immigrants, including accompanying spouses, and by illuminating how those characteristics contribute to the overall characteristics of new green card holders. To date, the research conducted describing the characteristics of spousal immigrants has focused solely on male spouses of U.S. Citizens. This research finds that while they have lower earnings or work in lower earning occupations than employment-based immigrants, but have stronger earnings growth (Jasso 1995, Duleep & Regets 1996). While spousal immigrants are often lumped in with other family based immigrants, they are subject to educational or skill criteria but they are much less stringent than employment preference immigrants and only require the immigrant have at least a high school degree.

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\(^{1}\) Chiswick (1981), Duleep (2013)


\(^{3}\) INS Yearbook 2012. Table 7: Persons obtaining legal permanent resident status by type and detailed class of admission: Fiscal Year 2012. Excludes refugees, asylees, and legalizations from the total. Diversity immigrants are subject to educational or skill criteria but they are much less stringent than employment preference immigrants and only require the immigrant have at least a high school degree.
spousal immigrants are generally much younger, more educated and more likely to be employed than other family-based immigrants. This may reflect the fact that unlike other family based immigrants they are selected through the marriage market.

**Figure 1: Distribution of New Legal Permanent Residents.** (INS Yearbook 2012. Excludes refugees, asylees and legalizations.)

While all spousal immigrants enter the United States through marriage, there are different paths for spousal immigrants to obtain green cards. As seen in Figure 1, most enter as spouses of U.S. Citizens; this is the largest admissions category by far. A small number enter as spouses of Legal Permanent Residents (LPR) already residing in the United States. Finally, some enter as accompanying spouses to principal immigrants, for instance as a spouse of an employment-based immigrant. Thus, although all spousal immigrants are selected through a marriage market, the marriage market in which they were selected and the characteristics they were selected on may vary greatly by admissions category. In this paper, I find substantial variation in characteristics across different admissions categories. This variation reflects the selection mechanism of the admissions category. For instance, accompanying spouses of employment-based immigrants, selected on education and skill, have higher levels of education and accompanying spouses of diversity-based immigrants, selected from traditionally low immigration countries, are more likely to be from low immigration countries.

The characteristics of spousal immigrants likely reflect the admissions category’s selection mechanism because of assortative mating. This would be consistent with previous research on assortative mating among immigrants. Kelly & Dalmia (2010)
found evidence of positive assortative mating along the dimensions of age and education for foreign-born to native-born and foreign-born to foreign-born marriages in the United States. While this presents a case for assortative mating among spousal immigrants, the population used in estimation includes more than just spousal immigrants, e.g. temporary non-immigrants and marriages that occurred after immigration. Jasso (2000) also finds evidence of positive assorative mating along the dimension of education for new legal permanent residents using the pilot version of the New Immigrant survey. In this paper, I extend the work of Jasso (2000) beyond education to examine country of origin, age, and employment. In addition, by using the full 2003 NIS data set, I am able to look at the relative characteristics of immigrants and their spouse across admissions category. I find immigrants and their spouses are strikingly similar along the dimensions of age, education, and country of origin for all admissions categories. While, under most categories of admission, the evidence suggests assortative mating along the dimension of employment, the exception is employment-based immigrants, whose spouses are much less likely to work. This could reflect cultural differences in division of labor within a marriage, or a temporary visa policy which restricts the employment of spouses of those with temporary employment visa.

Spousal immigrants play an important role in the impacts of policy change, not only because they are such a large proportion of new immigrants, but also because a high proportion of principal immigrants bring accompanying spouses. In order, to illustrate their importance, I will conduct three counterfactual exercises of potential policy reforms that have been proposed in the last three immigration reform bills. The first exercise will increase the number of employment-based immigrants. Since in my sample almost 80% of employment-based immigrants bring accompanying spouses, the size of the changes to the overall distribution largely depends on the characteristics of the spouses. For instance, most employment-based immigrants are male, therefore increasing the number would tend to increase the proportion of new immigrants that are male. However, since most of them also bring accompanying spouses, the change in the distribution of gender is almost zero. The next exercise looks at the results of removing spouses and children from an admission categories quota. The final exercise implements a point system, which demonstrates that the selection mechanism imposed on principal immigrants will be reflected in the characteristics of their spouses. The results demonstrate that spousal immigrants, in general, mirror the characteristics of principal immigrants.

This paper will explore the characteristics of spousal immigrants and how they influence the distribution of new legal permanent residents. The first section in this paper will describe the quotas and the selection mechanisms imposed by the current immigration policy, which play an important role in determining the characteristics of immigrants. Next, I will describe the New Immigrant Survey, the unique data set that was used in this paper. The following sections will describe the characteristics of spousal immigrants compared to other immigrants, compared to their spouses and across categories. These sections will demonstrate that spousal immigrants are unique in the broad category of “family-based” immigrants and that their characteristics largely reflect the selection mechanisms of their admission category due to assortative mating. Finally, three counterfactual exercises of potential policy reforms will be conducted, in order to
illustrate the importance of spousal immigrants in determining the effect of a policy change.

2 Legal Permanent Visas

An immigrant can qualify for a legal permanent visa, or green card, through several different categories. These categories of green cards vary in their eligibility requirements and the size of their quota. As seen in Table 1, immigrants who qualify for visas as spouses of U.S. Citizens, parents of U.S. Citizens or children of U.S. Citizen do not face any quotas. These immediate relatives of U.S. Citizens comprise 55% of all new legal permanent residents, with spouses of U.S. Citizens being the largest category by far at 35%. The remaining categories are all subject to quotas; approximately 52% of the quota is allotted for other family-based immigrants, 35% for employment-based immigrants and 13% for diversity-based immigrants, a lottery based category for immigrants from countries with traditionally low immigration rates. While family-based immigrants must be related to either a U.S. Citizen or Legal Permanent Resident already in the United States, they are not subject to any other eligibility requirements. In contrast, employment-based immigrants are selected based on their education, experience and occupation. Even diversity lottery green cards, which serve to increase the diversity of the nationalities of the immigrant population, require that an immigrant have at least a high school education or a certain skill level.

<table>
<thead>
<tr>
<th>Category</th>
<th>Quota</th>
<th>2012</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spouse of U.S. Citizen</td>
<td>No Quota</td>
<td>273,429</td>
<td>Married to a U.S. Citizen</td>
</tr>
<tr>
<td>Child of U.S. Citizen</td>
<td>No Quota</td>
<td>81,003</td>
<td>Child of U.S. Citizen</td>
</tr>
<tr>
<td>Parent of U.S. Citizens</td>
<td>No Quota</td>
<td>124,210</td>
<td>Parent of U.S. Citizen (18+)</td>
</tr>
<tr>
<td>Spouse/Child of LPR</td>
<td>88,000</td>
<td>87,602</td>
<td>Spouse or Child (&lt;21) of LPR</td>
</tr>
<tr>
<td>Unmarried Children of LPRs</td>
<td>26,250</td>
<td>12,095</td>
<td>Unmarried Child (21+) of LPR</td>
</tr>
<tr>
<td>Unmarried Child of U.S. Citizens</td>
<td>23,400</td>
<td>12,802</td>
<td>Unmarried Child (21+) of U.S. Citizen</td>
</tr>
<tr>
<td>Married Child of U.S. Citizens</td>
<td>23,400</td>
<td>21,747</td>
<td>Married Child of U.S. Citizen</td>
</tr>
<tr>
<td>Sibling of U.S. Citizens</td>
<td>65,000</td>
<td>59,898</td>
<td>Sibling of U.S. Citizen</td>
</tr>
<tr>
<td>Employment Preference</td>
<td>154,000</td>
<td>143,720</td>
<td>Education, Experience, Skill</td>
</tr>
<tr>
<td>Diversity Preference</td>
<td>55,000</td>
<td>40,320</td>
<td>Country of Origin, Education, Skill</td>
</tr>
</tbody>
</table>

While spouses of U.S. Citizens and spouses of Legal Permanent Residents make up approximately 38% of all new legal permanent residents, they are not the only immigrants who obtain visas through marriage. Approximately 15% of new immigrants obtain visas as accompanying spouses. When a foreign born person qualifies for a green
card to enter the United States, they may also obtain green cards for their spouses and children. These accompanying spouses and children count against the quota. For instance, a family consisting of a husband, wife and two kids, where the wife receives an employment preference green card, will consume four of the green cards allotted for employment-based immigrants.

Figure 2: Distribution of Quota by Class of Admission

Figure 2 above illustrates the distribution of quota’d green cards between principals, those who qualify for the green card, and their accompanying spouses and children. This implies that although 154,000 visas are allotted to employment immigrants in 2012, only 48% of them went to principal immigrants; the majority of the quota actually goes to their spouses and children.

3 Data

In this paper, I utilize the New Immigrant Survey (NIS-2003-1), the baseline survey for a broader panel survey of new legal permanent residents. The sample is a representative sample of new legal permanent residents who obtained their visas between May 2003 and November 2003. The sample of respondents was selected based on administrative data from the U.S. Immigration and Naturalization Service and oversampled employment-based immigrants and diversity immigrants. Each respondent was surveyed within seven months of receiving his or her legal permanent visa in his or her preferred language. Respondents could either be principal immigrants or accompanying spouses. Each respondent was asked about the education, language skills, employment, age and gender of themselves and their spouse. A supplemental survey was also conducted with the spouses of the respondent which covered similar topics. In addition to the basic information collected, a wide range of data including health information, employment history, migration history and household roster are collected for each respondent.
4 Characteristics of Spousal Immigrants

In the 2003 New Immigrant Survey data set, spousal immigrants comprised 57% of all new legal permanent residents over the age of 17. As such, their characteristics are weighted more than other family-based immigrants, employment-based immigrants or diversity-based immigrants. As seen in Figures 4 and 5, the result is that while spousal immigrants differ substantially from the other categories of immigrants along almost every dimension, their characteristics are almost identical to those of immigrants as a whole. Figures 3, 4 and 5, clearly demonstrate the importance of spousal immigrants in determining the overall characteristics of immigrants. While employment-based principal immigrants have very high employment rates, they only comprise 9% of the sample and therefore, they have relatively little weight on the overall distribution of characteristics. Similar to immigrants overall, spousal immigrants are predominantly females around working age (24-44 years old) from a diverse set of countries. Most spousal immigrants have at least a high school degree and more than a third have at least a college degree. They have a relatively low rate of labor force participation; almost a third are out of the labor force. Of those in the labor force, approximately seventy five percent are already employed within seven months of obtaining their legal permanent resident status. While the characteristics of spousal immigrants are clearly reflected in the overall characteristics of immigrants, their characteristics are distinctly different from other groups of immigrants along almost every dimension.

Figure 3: Distributions of New Legal Permanent Residents (NIS 2003, Adults)

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4 This is consistent with the INS yearbook from 2003, once
Figure 4: Spousal Immigrants vs. Other Immigrants: Gender, Age and Country of Origin (NIS 2003, Immigrants ≥18)

Characteristics of New Legal Permanent Residents

Overall | Diversity-Based | Employment-Based | Other Family-Based | Spousal

Male | 18-24 | 25-34 | 35-44 | 45-54 | 55+ | Europe | Asia | N. America | L. America | Middle East

Figure 5: Spousal Immigrants vs. Other Immigrants: Education & Employment

Characteristics of New Legal Permanent Residents

Overall | Diversity-Based | Employment-Based | Other Family-Based | Spousal

None | <HS | HS | Assoc. | BA/BS | Grad | Emp | Unemp. | Not in LF

Overall | Diversity-Based | Employment-Based | Other Family-Based | Spousal
4.1 Compared to Other Immigrants

Although they are often grouped with other family-based immigrants, spousal immigrants differ substantially from other family-based immigrants along almost every dimension depicted in Figures 4 and 5. While similar in terms of gender, spousal immigrants are much younger and come from a more diverse set of regions. They, also, have much higher levels of education; more than 35% of spousal immigrants have at least a college education compared to less 18% of other family-based immigrants. Not only are they more likely to participate in the labor force, of those in the labor force they are more likely to be employed. These results suggest that spousal immigrants should not necessarily be lumped in with other family-based immigrants. While other family-based immigrants are born into eligibility, spousal immigrants are indirectly selected through the marriage market.

The characteristics of spousal immigrants are also distinctly different than employment or diversity based immigrants. Since employment-based immigrants are selected on employment and education, it is not surprising that they have higher levels of education and employment than spousal immigrants. In addition, they are much more likely to be males from Asian countries. When compared to diversity-based immigrants, who are select from countries that have traditionally low immigration rates, spousal immigrants are less likely to come from one of these traditionally low immigration areas, like Europe or Africa. Diversity-based immigrants are, also, selected on education although to a much lower degree than employment-based immigrants. Their resulting levels of education are very similar although slightly higher than those of spousal immigrants. When compared to other groups of immigrants, spousal immigrant’s characteristics fall somewhere between those of employment or diversity-based immigrants and other family-based immigrants.

4.2 Across Admissions Categories

While the conclusions in the above section hold, in general, combining spousal immigrants into one group masks substantial variation in their characteristics. In fact, the overall characteristics of spousal immigrants, largely reflects the characteristics of Spouses of U.S. Citizens. This admissions category makes up more than 57% of all spousal immigrants. Their characteristics, therefore, drive the aggregate characteristics of spousal immigrants. As seen in Figure 7, the characteristics of the spousal immigrants align closely with those admitted under the category Spouses of U.S. Citizens.
The characteristics of other spousal immigrants largely reflect the selection mechanism for their visa category. Parents of U.S. Citizens are likely to be older and closer to retirement since the U.S. Citizen children sponsoring them must be at least 18 years of age. As seen in Figure 8 below, the characteristics of their spouses reflect this selection mechanism; they are much older and much more likely to be out of the labor force than the average spousal immigrant. Employment-based immigrants are selected based on education, which is reflected in their spouses having much higher levels of education than the average spousal immigrants. Similarly, diversity immigrants must be from countries with low rates of immigration to the United States, mainly from European, African and Middle Eastern countries. Spouses of diversity immigrants similarly are much more likely to be from these European, African or
Figure 7: All Spousal Immigrants vs. Spouses of U.S. Citizens (NIS 2003, Spousal Immigrants, ≥18 years old)

Figure 8: All Spousal Immigrants vs. Spouses of Parents of U.S. Citizens
Figure 9: All Spousal Immigrants vs. Spouses of Employment Preference Immigrants (NIS 2003, Spousal Immigrants, ≥18 years old)

Figure 10: All Spousal Immigrants vs. Spouses of Diversity Preference Immigrants
Middle Eastern countries. These results suggest that by selecting a principal immigrant on certain characteristics, an admission criterion appears to also select a spousal immigrant with similar characteristics, due to assortative mating.

4.3 Compared to Their Spouses

Just as the above analysis suggests, I find evidence of assortative mating along almost every demographic characteristic regardless of the type of spousal immigrant. As seen in Appendix A2, in almost every visa category, spousal immigrants are similar in age, education, birth country and employment to their spouse. The strongest divergence is for classes of admission that have the largest gender differences between the principal and their spouse. If men are much more likely to be the principal, spouses tend to be slightly younger and have lower levels of employment. The difference in rates of employment can be substantial, even though there is almost no difference in education levels. Although this may be the result of cultural or childbearing decisions, it may also be the result of temporary visa restrictions on spouses. While temporary visa holders are allowed to bring their spouses with them to the United States, their spouses are not allowed to work. The largest difference is seen for spouses of employment preferences, immigrants in this category are also the most likely to have already been in the U.S. on a temporary visa just prior to receiving their green card. This might explain why their spouses have such low rates of employment within 6 months of receiving their green card.

5 Impact of Potential Policies

Over the last decade, congress has introduced three senate bills, which have attempted to reform immigration policy. Each has proposed major changes to the legal permanent resident visa program, emphasizing a shift from family-based immigration to employment-based immigration. Some of the proposed changes include increasing the number of employment based-immigrants, excluding accompanying spouses and children from the quota or implementing a point system. In this section, I demonstrate the role of spouses in the result of each of these changes.

As discussed in Section II, each of the admissions categories is distinguished by the size of the quota as well as its eligibility requirements. The equations below explicitly demonstrate how quotas and accompanying spouses and children effect the overall distribution of characteristics. The average of any characteristic, $X$, of all immigrants can be written as:

$$X = \sum_{i} \omega_i \times X_i$$

5 In 2003, the following countries were ineligible for diversity lotteries: Canada, China, the Dominican Republic, El Salvador, Haiti, India, Jamaica, Mexico, the Philippines, South Korea, the United Kingdom (excluding Northern Ireland) and its dependent territories, Vietnam, Colombia, and Pakistan. Since 2003, the list has changed.
where \( X_i^k \) is the average characteristic within admissions category, \( i \), for immigrant type (principal, accompanying spouse or accompanying child), \( k \) and \( \omega \) represents the weight for that admissions category and immigrant type.

For each admissions category and immigrant type, the average characteristic is a function of the eligibility requirements they face such that:

\[
X_i^k = \sum_j X_j \text{ if } X_j \text{ for all immigrants, } j, \text{ in category } i \text{ of immigrant type } k
\]

The weight for each admissions category and immigrant type is a function of the size of the quota for the admissions category, the total number of the immigrants, and the rates at which principal immigrants bring accompanying spouses and children. The weights for each admissions category and immigrant type can be written as:

\[
\omega_i^k = \left( \frac{q_i}{T} \right) \times \alpha_i^k
\]

\[
\alpha_i^k = \frac{\beta_i^k}{\beta_i^p + \beta_i^S + \beta_i^C}, \beta_i^p = 1
\]

\[
T = \sum_i q_i
\]

where \( q \) represents the number of people entering under admission category \( i \) and \( \alpha \) represents the proportion that are immigrant type, \( k \), for admission category, \( i \), and \( \beta_i^k \) is the rate at which principals bring immigrant type, \( k \), for admission category, \( i \).

In order to conduct this policy exercise, there are several caveats, assumptions and restrictions that are made. The first is that the analysis is limited to individuals over the age of 18 years old, as it has been throughout this paper. While the effect of these policy changes on the characteristics of children would be an interesting exercise, educational attainment and employment could not be meaningful compared for this group. The second is that since this analysis utilizes information on immigrants who are receiving their green cards in 2003, it must be assumed that the size and characteristics of each admission category have not changed since 2003. Further, while some research has presented evidence of small spill over effects, predicting spillover effects is outside the scope of this paper.\(^6\) In addition, the analysis below assumes that there is always demand for more visas. This is not a strong assumption given the lengthy waiting lists for each admission category. Finally, I assume that the characteristics of new immigrants entering under a certain admission category have the same average characteristics as the immigrants in my sample entering under the same category and as the same type of immigrant (principal, accompanying spouse or accompanying child). This includes the assumption that the rates at which principals bring accompanying spouse and accompanying children are both constant within a category.

### 5.1 Quadruple Employment Quota

\(^6\) Wadwa (2007)
One of the most commonly suggested changes to immigration policy is to increase the size of the quota for employment-based immigrants. Such a change could have large effects on the characteristics of immigrants as a whole. In order to explore the impacts of this change and the role that spouses play, I will conduct a policy exercise where I quadruple the size of the employment preference category. While all of the immigration bills have proposed increases to the quota for employment preference immigrants, these increases are often tied to changes in other categories. In order to isolate the effect of increasing this category alone, the exercise quadruples the size of the category. The resulting percent of employment immigrants is similar to the percent of employment immigrants predicted after the 2013 CIR has been in place.

Quadrupling the quota for employment preference will not change the average characteristics of employment-based immigrants, based on my assumptions, but it will change its weight in determining the characteristics of immigrants as a whole. By increasing the quota for employment-based immigrant the weight for this group is altered such that:

$$\omega_E^k = (4q_E/T') \times a_E^k$$

for k=Principal, Spouse

$$T' = T + 3q_E$$

---

7 See Appendix A3 for the effect of doubling the employment preference quota.
8 Migration Policy Institute. Issue Brief No. 3. (April 2013)
where \( T' \) is the new total number of immigrants and \( E \) represents employment preference. From the equation above it is clear to see that quadrupling the employment preference quota, not only increases the weight for principal immigrants but also for their accompanying spouses. Thus the weight on the characteristics of accompanying spouses will also quadruple. An important factor for this analysis is that \( \beta_{E} \) is approximately 0.8 in my data set. Assuming that the rate of bringing accompanying spouses is the same for all new employment preference principals as current employment preference principals, for every ten additional employment preference principals that enter, an additional eight accompanying spouses will also enter. The weight on the characteristics of employment principals jumps from 0.09 to 0.23 and the weight on the characteristics of their spouses jumps from 0.07 to 0.19.

The size of this change to overall immigrant characteristics will not only depend on the change in the weight, but the characteristics of employment preference principals and spouses relative to the current average and to each other. As demonstrated in Appendix A1 and Appendix A2, there is substantial variation in characteristics among immigrants across different classes of admission. Principal employment immigrants tend to differ drastically from other immigrants along the dimensions of gender, country of origin, education and employment. Spouses of employment immigrants, in general, share many of the same characteristics; however they are much more likely to be female and are less likely to participate in the labor force or be employed.

Figure 12 shows the results of quadrupling the number of employment preference quotas, separately for the principal alone and then for the principal and their spouse on education and experience; therefore it is unsurprising that when their quota is increased there is a shift in education and employment. If only the number of principals is quadrupled, the results are that the percentage of immigrants with a college degree or higher jumps from 34% to 41%. When accompanying spouses are also quadrupled, the percentage further jumps to 44%, amplifying the results seen for just the principals. In contrast, while employment jumps for principals alone from 58% to 63%, the effect is actually slightly dampened by adding accompanying spouses to 62%.

In addition to altering education and employment, the increase in the employment quota could also change the distribution of gender, age and country of origin. While employment preference principals are largely male, most also bring accompanying female spouses. Thus the result of increasing the number of employment preference quotas on gender is almost zero. Both the results for age and country of origin are amplified by the accompanying spouses. The above analysis demonstrates that the results of increasing the number of employment-based immigrants greatly depend the characteristics of their spouses. While in most cases, their spouses appear to amplify the effects of increasing employment-based immigration, in others like gender and employment they can dampen the effects or eliminate them entirely.
5.2 Removing Accompanying Spouses and Children from the Quota
The 2013 immigration reform bill proposes that accompanying spouses and children no longer count against the quota for a visa category. This alone may have a substantial impact on the distribution of immigrants. The new weight for each category and immigrant type would be:

\[
\omega_i^P = \frac{q_i}{T}, \quad \omega_i^S = \frac{\beta_i^S q_i}{T}, \quad \omega_i^C = \frac{\beta_i^C q_i}{T},
\]

\[
T = \sum_i q_i + \sum_i \beta_i^S x q_i + \sum_i \beta_i^C x q_i
\]

The effect would almost double the number of adult new legal permanent residents in some categories with high marriage rates, like the employment-based category or married children of U.S. Citizens, but would not affect other categories such as spouse of U.S. Citizen or unmarried child of U.S. Citizen. The figure below shows the change in distribution and size. The charts in Appendix A3 show that although there would be a change in the proportion of immigrants from different groups, the overall characteristics of immigrants would change very little.

5.3 Implementing A Point System

The last three immigration bills introduced to the Senate have all proposed implementing a point system. Similar point systems are already in effect in Australia, Canada and New Zealand. These point systems assign points to principal immigrants based on education, experience, age, language skills, country of origin and whether they have relatives in the United States. This would greatly alter the selection mechanism for immigrants. I apply the 2013 CIR bill’s Tier 1 point system to see how this system could affect the characteristics of new legal permanent residents. While the system will directly select
characteristics for principal immigrants, it could have an indirect effect on the characteristics of their spouses as well.

As a first step, I apply the point system to principal immigrants. They are assigned point values based on their age, level of education, English language proficiency, and work experience. While it is unclear what the cut off would be in the case of a point system, I use a cut off that aligns with the Australian and Canadian point systems. Under this point system, approximately 75% of the new legal permanent residents would not qualify for a visa. Employment-based immigrants are the most likely to pass with 64% passing and Spouses of U.S. Citizens were the second most likely to pass with 17% passing. Parents of U.S. Citizens and Spouses of Legal Permanent Residents were the least likely to pass with only 2-3% passing.

While the effect of the point systems is obvious for some characteristics, it is not for others. The point system ranks those with higher levels of education and experience the highest. As seen in Figure 7 below, the application of the point system shifts the educational and employment distribution of new legal permanent residents up, selecting new legal permanent residents with higher levels of education and who are more likely to be employed. Working age immigrants also receive higher points; this is reflected in the increased percentage of principals age 25-34. Finally immigrants from countries with traditionally low immigration rates also receive extra points; the effect of this is relatively minor with slight increases in immigrants from Africa and Europe.

While many of the changes reflect the point system directly, there are some indirect effects as well. Most strikingly, there is a sharp decline in the percentage of principal immigrants from Latin America and the increase in the percentage that are male.

In addition to altering the characteristics of principal immigrants, a point system would also alter the characteristics of their spouses. As seen in the Figure 8 below, the characteristics of accompanying spouses also reflect the selection mechanisms outlined by the point system. There is a shift in the distribution of education, increasing the proportion who have a bachelor’s degree or higher, and a shift in the age distribution, increasing the proportion of accompanying spouses who are working age. The indirect effect on birth country is also reflected in the characteristics of spouses, with a smaller proportion from Latin America and a larger proportion from Asia. In general, the changes in characteristics of accompanying spouses move in the same direction as those of the selected principal immigrants, the exceptions are for gender, where spouses are now much more likely to be female, and employment, which does not appear to change at all for spouses.
The resulting characteristics of the new legal permanent residents are a combination of both the principals who are subject to the selection and their spouses. As seen in Figures 7 and 8, below, the changes in characteristics of principal immigrants and their accompanying spouses after applying a point system are strikingly similar along the dimensions of age, education and birth country. Thus the overall characteristics of the new immigrant population are almost identical to the characteristics of the principals alone. The exceptions are gender and employment. Although the point system selects more men, most of those men are married and bring accompanying wives; the result is that there is relatively little change in the proportion of new legal permanent residents that are men. While the overall proportion of new legal permanent residents that are employed increases, the increase is dampened by the lower employment rates of accompanying spouses.
In this section, I have shown the importance of accounting for spouses of immigrants when considering the effect of changes in immigration law. The 2013 CIR Bill proposes several of these changes simultaneously. It will eliminate diversity visas and visas allotted to the siblings of U.S. Citizens and decrease the number of family based visas. As mentioned above, accompanying spouses and children will no longer count against the quota for any given class of admission. Additionally a point system will be implemented for employment based visas. Finally, spouses and children of legal permanent residents will no longer be subject to a quota.

Taken as a whole it would be difficult to predict the effect of all of these changes. While it appears that there will be fewer family-based visas and more highly selected employment-based immigrants, the provision which allows for unlimited entry of spouses and children of legal permanent residents could dwarf these other changes. A recent issue brief by the Migration Policy Institute estimates the new distribution of new legal permanent residents in 2018. They estimate that employment and merit-based immigrants will make up 35-41% of new legal permanent residents. While this is an increase from the current proportion, they predict family-based immigration will still make up 49-54% of new legal permanent residents. While this appears to be a situation similar to the example I generate above where I quadrupled the number of employment-based immigrants, the issue of predicting the characteristics of those immigrants is
substantially more complicated for several reasons. One major complication is that by 2018 the long waitlists that now characterize most of the categories subject to quotas will have been cleared. Since many of the new immigrants in this survey had waited for long periods of time on waitlists, it’s possible that there will be substantial changes to the characteristics of those who newly apply.

6 Conclusions

Spousal immigrants make up almost half of the new immigrant population in the United States. As such a large portion of new legal permanent residents they drive the overall distribution of characteristics of immigrants. They tend to be working age females with at least a high school education, although there is substantial variation depending on their class of admission. While spousal immigrants are not directly subject to eligibility requirements, the selection mechanisms for the categories under which they enter are reflected in their characteristics. In general, they are very similar to their spouses along the dimensions of age, education and birth country. While they tend to have lower levels of employment, this may be the result of having already lived in the United States under a temporary visa, which restricts the employment of spouses. In general, spouses of immigrants have very similar characteristics to principal immigrants and will, therefore, amplify any changes in characteristics of principals.
Chapter 2

Incentives to Marry:
Draft Deferments during the Vietnam War
1 Introduction

Over the past couple of decades, the U.S. government has become increasingly involved in the marriage market.\footnote{There are over 1,100 direct benefits of marriage created by the Federal government, including tax subsidies, spousal health insurance coverage, etc. (Yakush 2007)} In addition, many politicians have made marriage promotion an important part of their political agendas.\footnote{President George W. Bush had marriage promotion at the forefront of his agenda when he took office in 2000. During his administration, TANF was reauthorized with $500 million in funding dedicated to block grants to states for marriage promotion (Yakush 2007). In 2011 two of the GOP presidential candidates signed the Marriage Leader Pledge, which includes a pledge to eliminate marriage penalties currently in effect.} Cherlin (2003) discusses the ensuing debate over whether government policies should encourage marriage. Proponents point to studies, such as Waite and Gallagher (2000), which show that marriage is associated with positive outcomes including better physical and mental health, higher income and better outcomes for children. Those opposed argue that marriages induced by policy might be more likely to end in divorce. This debate hinges on the answer to two important questions: are individuals responsive to marriage promoting policies, and are marriages induced by government policy more likely to end in divorce?

Economic theory predicts that the answer to each of these questions is “yes”. In Becker (1973), he presents a model of marriage, in which men and women marry if the expected utility of getting married outweighs the expected utility of staying single. In this context, a policy which increases the value of marriage should lead to more marriages. According to Becker et al. (1977), the smaller the expected gains from marriage the higher the probability of divorce. Marginal marriages, those which would not have occurred without the implementation of the policy, will be more likely to end in divorce because they produce the lowest gains to marriage.

In contrast to these theoretical considerations, existing empirical literature indicates that in the United States individuals are fairly unresponsive to government policies which alter marriage incentives. Alm and Whittington (1997, 1999) and Herbst (2011) find that the marriage subsidies and penalties that currently exist in the tax code have a significant effect on the timing and probability of marriage but the effects are very small. Similarly, studies looking at other policies which alter the incentive to marry, such as the Personal Responsibility and Work Opportunities Act (PRWORA) and Temporary Assistance to Needy Families (TANF), find they have little or no effect on the decision to marry.\footnote{Donley and Wright (2008) look at the effect of marriage promoting policies enacted in states as a result of PRWORA and find that these policies have no effect on marriage. In a review of papers examining the effect of TANF on family formation, Moffitt (1997) finds that although a simple majority of studies find a significant effect of TANF on marriage and fertility, these results are sensitive to methodology used and specification. A sizable minority of these studies finds no effect at all and many that find a significant effect, find a small effect.} This insensitivity of the marriage decision may be explained by the relatively small magnitude of the incentives. For instance, the strongest policy associated with PRWORA, is a marriage
subsidy of $1,200 per year.\textsuperscript{4}

To test this, I study a policy which provided much stronger marriage incentives, on the order of $30,000.\textsuperscript{5} Specifically, I study the effects a Vietnam War marriage deferment. This policy may alter marital decisions in two ways, by accelerating the timing of marriage and by inducing marginal marriages, marriages that would not have occurred without the policy. To study the impact on the timing of marriage, I estimate the effect of the marriage deferment on the hazard of marriage, allowing the effect of the deferment to vary with age. The results from this model show that the marriage deferment has strong effects on the timing of marriage for draft eligible men, for example, the probability of marriage at age 21 increases by 15%. As a robustness check, I estimate the effects of marriage deferments available during the Korean War and World War II and find the same qualitative results on the timing of marriage. In order to test whether the policy induced marginal marriages, I estimate the effect of the marriage deferment on the probability of marrying by age 30. I find that the marriage deferment has a positive and significant effect, increasing the probability of marrying by age 30 by 1%. Further, the effect on both the timing and probability of marriage appears to be strongest for those most vulnerable to induction into the draft.\textsuperscript{6} Although these results show that government policies can both accelerate the timing of marriage and induce marginal marriages, they also suggest that the incentives have to be very large.

Although there is extensive literature which studies the effect of government policies on marriage in the United States, few have examined the indirect effect on divorce.\textsuperscript{7} Those that do, confound the effects of military related marriage policy and selection into the military. The military provides marriage subsidies and benefits to military personnel, Zax and Flueck (2003) and Hogan and Seifert (2008) study the effects of these subsidies and benefits on marriage and divorce. They find that veterans are more likely to get married and are more likely to divorce by comparing the marriage hazards and the probability of divorce for veterans and civilians but do not control for selection into the military. In contrast, this paper studies the effects of the Vietnam War marriage deferment on marriage and divorce by exploiting cross cohort variation in eligibility for the marriage deferment. The results show that the policy is associated with a lower probability of divorce by 1%, casting doubt

\textsuperscript{4}Marriage penalties and subsidies in the tax code can be as large as $10,000 per year but depend on income, with the large marriage subsidies and penalties being associated with the highest income.(Alm and Whittington 1997, 1999)

\textsuperscript{5}Rohlfs (2005) calculates the willingness to pay to avoid the draft and finds that it is between $30,000 and $50,000 in 2003 dollars for white men during the Vietnam War, 1966-1973.

\textsuperscript{6}For men with a college education, who likely had student deferments exempting them from the draft, the marriage deferment had no effect. The effect of the marriage deferment is driven by men without a college education, who were most vulnerable to induction.

\textsuperscript{7}There is also a working paper which looks at the effect of a marriage subsidy in Austria. In Frimmel et al. (2011) they study the effect of an announcement repealing marriage subsidies in Austria on marriage rates and the divorce hazard. They find that the announced repeal of the subsidies caused a spike in the marriage rates and a subsequent increase in the divorce hazard.
2 The Draft and Marriage Deferments

The Vietnam War draft was a government system which inducted men 19-25 years old into the military. Once inducted men were required to serve two years on active duty and five years on reserve duty. Rohlfs (2005) calculates the willingness to pay to avoid the draft and finds that it is between $30,000 and $50,000 for white men during the Vietnam War. If a man wanted to avoid military service he had to qualify for a deferment, which were available to students, married men, and fathers. These deferments provided strong incentives for men to go to school, have children or get married. It has been well documented that Vietnam War draft deferments for students and fathers affected the education and fertility decisions of young men and women, yet the effects of marriage deferments on their marital decisions has been largely ignored (Card and Lemieux 2001, Kutinova 2009).

While the draft deferments for students and fathers were available for extended periods as seen in the timeline in Figure 1, the marriage deferment was only available from September 1963 until August 1965. President Kennedy created the marriage deferment in 1963 in response to a surplus of inductees that resulted from a long period of peace and baby boomers reaching the age of liability. The entry of the U.S. into the Vietnam War then lead to a shortage of inductees, as a result in August 1965 President Johnson rescinded the

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8 The discussion in this section is based on Flynn (1993).
10 A fatherhood deferment was created at the same time but this deferment was obsolete while the marriage deferment was in effect, because in order to qualify men had to be married.
deferments for married men.\textsuperscript{11}

There were two other time periods with marriage deferments, during the Korean War (June 1948 - June 1951) and, during World War II (September 1940 - December 1941), as seen in Figure 2. The Korean War and World War II marriage deferments were enacted and repealed in much the same way as the Vietnam War deferment. The World War II deferment for married men differed along one important dimension, the draft eligible age range.\textsuperscript{12} Specifically, the age of liability was 21-31 years old from 1940-1941 and 20-36 years old from 1941-1942. The World War II and Korean War deferments provide the opportunity to study how a marriage deferment affected different cohorts and different ages of liability.

3 Data

A 1\% Public Use Microdata Sample from the 1960 and 1980 U.S. Census provides the data for the estimations presented in this paper. This data set includes variables for marital status, age and quarter of first marriage, current marital status and number of marriages. It also includes demographic data relating to education, sex, race, veteran status, wage, labor force participation, and number of children at the time of the survey.\textsuperscript{13}

\textsuperscript{11}Although, he had promised that those married by August 25th, 1965 would be able to maintain their deferments through the remainder of the war, he later rescinded that statement.

\textsuperscript{12}The marriage deferment for WWII was also under another name, hardship deferment, but provided the same benefits to married men from 1940-1941. Specifically, all wives qualified as dependents and men did not need to demonstrate hardship in order to qualify (Flynn 1993).

\textsuperscript{13}Estimation is restricted to white men and women.
4 Timing of Marriage

4.1 Estimation Strategy

The marriage deferment, when in place, provides clear incentives to alter the timing of marriage for draft eligible men. Using an unbalanced panel for years 1956-1980 created from the 1980 census, I estimate the effect of these incentives on age of marriage. I utilize a discrete time transition model of getting married at age, \( a \), where the hazard function is defined by

\[
\lambda(a|Z\beta) = (1 + \exp(-Z(a)\beta))^{-1}, a = 17, \ldots, 32
\]  

I allow the effect of the availability of the marriage deferment to vary with age. This flexibility is important for two reasons. First, the availability of the marriage deferment should only effect those men who are in the draft eligible age range, 19-25 years old. By allowing the effect of the deferment to vary freely with age, the model provides a test of this restriction. Second, induction into the draft was based on age, with the oldest men within the ages of liability drafted first. This implies that the effect of the deferment will likely vary with age, with the effect being strongest for those ages most vulnerable to draft induction. The flexibility of the following specification allows the model to capture heterogenous effects by age. Another dimension on which the effects might vary is by war status. In order to capture this, I allow the effect of the marriage deferment to vary with war status. This leads to the following specification for \( Z(a)\beta \):

\[
Z(a)\beta = MD_{i,t}^{Peace} \beta_a^M + MD_{i,t}^{War} \beta_a^W + War_{i,t} \beta_a^W + PostWar_{i,t} \beta_a^{PW} + X_{a,i,t} \beta_x
\]

where \( t \) represents calendar time, \( a \) represents age, \( i \) represents the individual, \( \beta_a^k \) is an age specific coefficient on variable \( k \), \( MD_{i,t}^{Peace} \) is an indicator for availability of a marriage deferment during peacetime, \( MD_{i,t}^{War} \) is an indicator for availability of a deferment during wartime, \( War_{i,t} \) is an indicator for wartime, \( PostWar_{i,t} \) is an indicator for the year after war, \( X_{a,i,t} \) includes a set of age dummies, year dummies, quarter dummies and state dummies. The coefficients on the marriage deferment indicators, the war indicator, and the post war indicator are all allowed to vary freely with age.

The above model will consistently estimate the effect of the deferment as long as conditional independence holds. I condition on both year and age identify the effect of the marriage deferment off of variation in availability of the deferment across quarters within years.\(^{14}\) Although the model implicitly assumes homogenous treatment effects within age and war status, it is robust to unobserved heterogeneous treatment effects. Since availabil-

\(^{14}\)For instance, the marriage deferment was repealed in October of 1965, this implies that a 23 year old in the 3rd quarter of 1965 should be affected, but a 23 year old in the 4th quarter of 1965 should not.
ity of the deferment is universal, if there are unobserved heterogenous treatment effects, the estimates from the model above will measure the average treatment effect.

4.2 Results: Vietnam War Marriage Deferments

Figures 3 through 6 present results from the above model as graphs of the predicted probability of marriage by age. Figure 3 compares the predicted hazard of marriage during peace-time, with a marriage deferment, the dotted line, and without a marriage deferment, the solid line. Figures 4 through 6 compare the predicted hazard of marriage during wartime, with a marriage deferment, the dotted line, and without a marriage deferment, the solid line.\textsuperscript{15}

Figure 3 illustrates the acceleration of marriage as a result of the deferment during peace-time. Specifically, it increases the probability of marriage at age 20, 21 and 23 by 9, 13 and 11%. As expected the effect of the deferment is stronger during wartime, when men are both more vulnerable to the draft and face a higher cost to being drafted. During wartime, the probability of marriage at age 20 and 21 increase by 11 and 15%, respectively. For all other ages the effect is negative or insignificant. These results show that the deferment had a positive and significant effect on men in the draft eligible age range. Furthermore, given

\textsuperscript{15}Coefficients and standard errors for the specification run on white men and graphs with confidences intervals can be found in the appendix of the paper.
Figure 4: The Effect is Stronger During Wartime

Figure 5: The Effect is Strongest for Men without a College Education
Figure 6: **There is No Effect for Men with a College Education**

![Graph showing no effect for men with a college education.]

Figure 7: **The Effect of the Marriage Deferment is Mirrored for Women**

![Graph showing the effect of the marriage deferment for women.]

13% Increase
that men were inducted eldest first into the draft and the median age of induction was be-
tween 21 and 22 years old at the time, the effect is strongest for those ages most vulnerable
to the draft.

During the Vietnam War, men could avoid the draft by attending college and qualifying for
student deferments. Thus, for men who attended college, the availability of the marriage
deferment should have no effect on the timing of marriage. This can be seen in Figure 5.
In contrast, Figure 6 reveals a strong and significant effect of the marriage deferment on
men who did not attend college. For these men that were most vulnerable to the draft the
marriage deferment had the strongest effect, increasing the probability of marriage at age
21 by 24%.

Although women were not liable for induction into the draft, the marriage deferment is
likely to have an indirect effect on their timing of marriage. The effects of the deferment
for men are mirrored when looking at the hazards for women. Figure 7 shows that the
availability of the marriage deferment accelerated the timing of marriage for women in a
range of ages around those of men. Specifically, the marriage deferment led to a significant
increase in the probability of marriage for women 18 to 22 years old, for instance increasing
the probability of marriage at age 19 by 13%.

4.3 Results: Korean War and WWII Marriage Deferments

As a robustness check, I use an unbalanced panel of years 1935-1960 created using 1960
Census data to estimate the same hazard model using the Korean War and WWII marriage
deferments for identification. The Korean War deferments were enacted and repealed in
much the same way as the Vietnam War deferments. The qualitative results show that
the effects are the same. The marriage deferment accelerated marriage for men, with the
strongest effect for men with no college education and no effect for men with a college
education. These effects are mirrored for women.16 The results from the World War II
marriage deferment differ on one important dimension – the age of liability. During World
War II the age of liability was 21-31 years old for the years 1940-1941, and 21-36 years
old for 1942-1943. Consequently the results show that the effect of the deferment is not
limited to 19-25 years olds as it was for the Vietnam and Korean War deferments. Instead
the effect of the deferment is concentrated on those 23-30 from 1940-41 and for those 23-32
for 1942-1943.17

The results presented in this section show that marriage deferments accelerated the timing
of marriage for young men and women during the Vietnam War, the Korean War and World
War II. The effects of these deferments were restricted to those men within the draft eligible
age range. In addition these effects were strongest during wartime and for those men most

16 Graphical results can be found in the appendix, Figure 14, Figure 15, Figure 16, Figure 17 & Figure 18
17 Graphical results can be found in the appendix, Figures 19 and 20
vulnerable to the draft. These findings suggest that marriage deferments had strong effects on the timing of marriage and that these effects are robust to different cohorts and ages of liability.

5 Probability of Marriage: Estimation and Results

In the previous section, the results showed that marriage deferments accelerated the timing of marriage. However, the question remains whether these are accelerated marriages or marginal marriages. In other words would the men induced into marriage by the deferment have married by age 30 without the marriage deferment?18

5.1 Framework

The propensity to marry by age 30 for person, i, can be characterized by the following equation:

\[ M_i^* = E_i \beta_i + X_i \gamma + u_i \]  

\[ M_i = \begin{cases} 1 & \text{if } M_i^* > 0 \\ 0 & \text{if } M_i^* \leq 0 \end{cases} \]

where \( M_i^* \) is the propensity to marry, \( M_i \) is an indicator for being married, \( E_i \) is an indicator for exposure to the marriage deferment, \( X_i \) is a set of controls, and \( u_i \) are the unobservables. Equation (2) is a heterogenous treatment effects model and can be rewritten as

\[ M_i^* = E_i \bar{\beta} + X_i \gamma + \epsilon_i \]  

where \( \bar{\beta} \) is the average of \( \beta_i \) and \( \epsilon_i = (\beta_i - \bar{\beta})E_i + u_i \). Within this framework, if the treatment, \( E_i \) and the unobservables, \( \epsilon_i \), are conditionally independent and there is universal treatment given the control variables, a logit model of the above propensity to be married by age 30 will estimate the average treatment effect.19 In other words, one must assume \( \epsilon_i \perp \! \! \! \perp E_i | X_i \).

5.2 Estimation Strategy

I estimate the effect of the marriage deferment on the probability of marriage by age 30 using a logit model with the following specification for \( M_i^* \)

\[ M_i^* = E_i \beta^M + FD_i \beta^F + War_i \beta^W + X_i(t)' \beta^x \]  

---

18Over 87% of my sample is married by age 30 and only another 4% will marry at older ages.

19Universal treatment means that a person, i, does not select into treatment based on differential benefits from treatment.
Table 1: Probability of Marriage: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>MD Cohort</th>
<th>Control Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>37.90</td>
<td>36.54</td>
</tr>
<tr>
<td>College</td>
<td>0.45</td>
<td>0.49</td>
</tr>
<tr>
<td>Veteran</td>
<td>0.40</td>
<td>0.45</td>
</tr>
<tr>
<td>Urban</td>
<td>0.68</td>
<td>0.69</td>
</tr>
<tr>
<td>South</td>
<td>0.29</td>
<td>0.29</td>
</tr>
<tr>
<td>Wage</td>
<td>8.80</td>
<td>8.26</td>
</tr>
<tr>
<td>Labor Force</td>
<td>0.96</td>
<td>0.96</td>
</tr>
<tr>
<td>Married</td>
<td>0.87</td>
<td>0.85</td>
</tr>
<tr>
<td># Obs.</td>
<td>486069</td>
<td>487375</td>
</tr>
</tbody>
</table>

where $E_i$ is an indicator for being age 19-25 during the Vietnam War marriage deferment, $FD_i$ is an indicator for being age 19-25 during the Vietnam War fatherhood deferment, $War_i$ is an indicator for being age 19-25 during the Vietnam War, and $X_i$ includes a set of controls for a trend in cohort, state dummies, and an indicator for urban/rural. In the previous section, the hazard model estimates the effect of being exposed to the policy at a point in time. In this section, in order to identify whether the deferment encouraged marginal marriages, the model estimates the effect of ever being exposed to the marriage deferment on the probability of marrying by age 30. Exposure to the policy, $E_i$, is defined by cohort, all men who were 19-25 years old, between September 1963-August 1965 are considered exposed to the policy.\(^{20}\)

As previously stated, the effect of exposure to the marriage deferment will be consistently estimated if conditional independence holds. Since I condition on a trend in cohort, exposure to the Vietnam War, and exposure to the fatherhood deferment, the effect of the marriage deferment is identified off deviations from a cohort trend. One must assume that control variables capture all other cross cohort variation in the probability of marriage.\(^{21}\)

To estimate this model, I create a dataset which includes the 8 cohorts that were exposed to the marriage deferment and 4 cohorts born before and 4 cohorts born after.\(^{22}\) In Table 1, the descriptive statistics are presented for the two groups of men.\(^{23}\)

\(^{20}\)Specifically, those born between the first quarter of 1938 and the third quarter of 1946 will be considered eligible.

\(^{21}\)For instance, those exposed would be 19-25 during the early to mid 1960s, the beginning of the “cultural decade”. The model requires assuming that this did not have an effect on the probability of marriage.

\(^{22}\)The qualitative results are not sensitive to expansion or contraction of the control group, nor are they sensitive to the exclusion of the 4 cohorts before or after those exposed to the marriage deferments.

\(^{23}\)The differences in means are statistically significant for all variables in Table 1.
Table 2: Probability of Marriage: Marginal Effects

<table>
<thead>
<tr>
<th>Variable</th>
<th>Men</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD</td>
<td>0.007**</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td>(0.005)</td>
</tr>
<tr>
<td></td>
<td>0.007***</td>
<td>(0.002)</td>
</tr>
<tr>
<td>War</td>
<td>0.006</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.010)</td>
</tr>
<tr>
<td></td>
<td>0.003</td>
<td>(0.005)</td>
</tr>
<tr>
<td>FD</td>
<td>0.013***</td>
<td>0.017***</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td>(0.004)</td>
</tr>
<tr>
<td></td>
<td>0.009***</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Urban</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>State Dummies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cohort Trend</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td># Obs.</td>
<td>906031</td>
<td>415954</td>
</tr>
<tr>
<td></td>
<td>490077</td>
<td></td>
</tr>
</tbody>
</table>

***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level

5.3 Results

Table 2 presents the results for all men and separately by education. The marriage deferment increased the probability of marriage by approximately 0.7 percentage points or 1%. This implies that the marriage deferment not only accelerated marriage but induced marginal marriages. The effect of exposure to the marriage deferment on men who did not attend college is large and significant, while the effect on men who did attend college is insignificant. These results suggest, again, that exposure to the marriage deferment had the strongest impact on those men most vulnerable to the draft. The results presented in this section suggest that the marriage deferment induced some men to marry who otherwise would not have married.

The fatherhood deferment also had a positive and significant effect on the probability of marriage. The fatherhood deferment was available for the 4 years after the marriage deferment was repealed, the most intense years of the Vietnam War. It required that men both have a child and be married and appears to have encouraged marriage on its own. In addition, the Vietnam War appears to have had a positive but insignificant effect on the probability of marriage.\(^{24}\)

This section present results which show that the Vietnam War marriage deferment increased the probability of marriage by age 30. This implies that the marriage deferment induced marginal marriages.

\(^{24}\)This is consistent with results found in the previous section, see Figure 10.


6 Probability of Divorce: Estimation and Results

The previous two sections have demonstrated that the marriage deferment both acceler-
ated the timing of marriage and induced marginal marriages. Theory suggests that these
marginal marriages will be more likely to end in divorce because they produce smaller
gains to marriage. This hypothesis can be tested by looking at the effect of the marriage
derement on the probability of divorce.

6.1 Framework

The reduced form propensity to divorce by 1980 for person \( i \) can be characterized by the
following:

\[
D_i^* = E_i \beta_i^D + X_i \gamma^D + u_i^D
\]

\[
D_i = \begin{cases} 1 & \text{if } D_i^* > 0 \text{ and } M_i = 1 \\ 0 & \text{if } D_i^* \leq 0 \text{ and } M_i = 1 \end{cases}
\]

where \( D_i^* \) is the propensity to divorce, \( M_i \) is an indicator for being married determined
by Equation (2), \( D_i \) is an indicator for being divorced, \( E_i \) is an indicator for exposed to
the deferment, \( X_i \) is a set of controls, and \( u_i^D \) are the unobservables. Equation (5) can be
rewritten as

\[
D_i^* = E_i \bar{\beta}^D + X_i \gamma^D + \epsilon_i^D
\]

where \( \bar{\beta}^D \) is the average of \( \beta_i^D \) and \( \epsilon_i^D = (\beta_i - \bar{\beta})E_i + u_i \). In this framework, estimation of \( \bar{\beta} \)
will suffer from selection bias even when conditional independence and universal treatment
are assumed. Only those men with the highest benefit from the deferment will marry as a
result of the deferment, i.e. only those with \( \beta_i \) greater than some threshold \( \bar{\beta} \). Thus, \( \bar{\beta}^D \)
will estimate the average effect for those men. One must make the strong assumption that
\( \epsilon_i^D \perp \epsilon_i \mid X_i \) and \( \epsilon_i^D \perp E_i \mid X_i \) in order to interpret the reduced form estimation of \( \bar{\beta}^D \) as an average
treatment effect.

6.2 Estimation Strategy

I estimate the effect of the marriage deferment on the probability of divorce by age 30 using
a logit model with the following specification for \( D_i^* \)

\[
D_i^* = MD_i \gamma^M + FD_i \gamma^F + War_i \gamma^W + X_i(t)^\prime \beta^x
\]

where \( MD_i \) is an indicator for being age 19-25 during the Vietnam War marriage deferment,
\( FD_i \) is an indicator for being age 19-25 during the Vietnam War fatherhood deferment, \( War_i \)
is an indicator for being age 19-25 during the Vietnam War, and \( X_i \) includes a set of controls for a trend in cohort, state dummies and an indicator for urban/rural.

In this model as in the probability of marriage model, the effect of the marriage deferment is identified by across cohort variation. Again, I control for a trend in cohort, exposure to the Vietnam War and exposure to the fatherhood deferment. Controlling for exposure to the fatherhood deferment, \( FD_i \) is especially important in this estimation. In August of 1965, when the Vietnam War marriage deferment was repealed, President Johnson had assured men who had married prior to the repeal that they could keep their deferments as long as they remained married. In October 1965, however, he announced that all married men would be eligible for induction regardless of the date of marriage. These men had two options, allow themselves to be inducted or obtain another deferment. Kutinova (2009) finds that many of these men chose to have children in order to obtain a fatherhood deferment and avoid induction. Having children may increase the cost of divorce, and therefore decrease the probability of divorce. This may dampen any effects of the marriage deferment on divorce. As a consequence it is important control for exposure to the fatherhood deferment.

As previously stated in Section 6.1, the estimates of the effect of exposure to the deferment will likely include selection bias. In addition, these estimates may measure a combination of the effect of entering a marginal marriage and avoiding the draft. A man who marries as a result of the deferment could not have been drafted until at least October 1965 when the draft began inducting married men. The estimate of the effect of exposure to the marriage deferment may, therefore, combine the effects of not being drafted and being induced into marriage. Given these considerations, the results in this section are best interpreted as descriptive.\(^{25}\)

Table 3 shows descriptive statistics for married individuals from the same sample as in Table 1. Comparing Table 1 and Table 3, the descriptive statistics for the two groups are very similar. This table includes the additional variables for whether a person has children and whether a person is divorced. It appears that those exposed to the marriage deferment were more likely to have children. As previously stated this may be the result of the fatherhood deferment.

### 6.3 Results

Table 4 presents the results for the divorce regression for all men and separately for men by education. In contrast to the previous literature and what is predicted by theory, exposure to the marriage deferment is correlated with a lower probability of divorce by 0.2 percentage points or 1%. This correlation is largest for men who did not attend college, those most affected by the marriage deferment. In contrast the effect for men who did attend college is

\(^{25}\)In this paper I do not attempt to control for selection, this is left to a forthcoming paper.
### Table 3: Probability of Divorce: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Men</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MD Cohort</td>
<td>Control Cohort</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>37.94</td>
<td>36.84</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>0.45</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>Veteran</td>
<td>0.40</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>0.68</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>0.30</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Wage</td>
<td>8.90</td>
<td>8.40</td>
<td></td>
</tr>
<tr>
<td>Labor Force</td>
<td>0.97</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>0.11</td>
<td>0.11</td>
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<tr>
<td>Child</td>
<td>0.81</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td># Obs</td>
<td>449124</td>
<td>434879</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4: Probability of Divorce: Marginal Effects

<table>
<thead>
<tr>
<th>Variable</th>
<th>Men</th>
<th>College</th>
<th>No College</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD</td>
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<td>0.001</td>
<td>-0.004***</td>
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<tr>
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<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>War</td>
<td>0.004***</td>
<td>0.001</td>
<td>0.006***</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.002)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>FD</td>
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<td>0.000</td>
<td>-0.004***</td>
</tr>
<tr>
<td></td>
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<td>(0.001)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Urban</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>State Dummies</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Cohort Trend</td>
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<td>Yes</td>
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</table>

***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level
insignificant. These results suggest that for those exposed to the marriage deferment, men most vulnerable to the draft and those most likely to be induced to marry, were the least likely to divorce.

One possible explanation for this result is that the marriage deferment is measuring a combination of the effect of not being drafted and being induced to marry. By definition those men who took advantage of the marriage deferment were ineligible to be drafted. Men who were not inducted into service and therefore not veterans, may be less likely to divorce because they have not been traumatized by war. This would be consistent with work presented in Zax and Flueck (2003) & Hogan and Seifert (2008), which shows that veterans are more likely to divorce.

Another possible explanation is selection into marriage. For instance, those who are risk averse will value the certainty of the marriage deferment to the uncertainty of being drafted. These men will also be less likely to get divorced, preferring the certainty of married life to the uncertainty of reentering the marriage market. The second possible explanation is diminishing marginal utility. With diminishing marginal utility, men who have low utility from being single, will value the marriage deferment more highly than other men. These men will also be less likely to divorce. The results presented in this section show that those exposed to the marriage deferment, although more likely to marry, are less likely to get divorced.

Exposure to war alone during the ages of liability is associated with an increase in the probability of divorce. This is consistent with previous research which suggests that veterans are more likely to get divorced (Zax and Flueck 2003 and Hogan and Seifert 2008). The fatherhood deferment is associated with a lower probability of divorce. Marriage specific investments, such as children, lower the probability of divorce according to theory; thus, a policy which encourages couples to have more children should decrease the probability of divorce.

7 Conclusion

In this paper I attempt to answer two questions. First, can government policies influence the marital decisions of individuals? I find that some government policies with sufficiently strong incentives can have a large and significant effect on marriage. Specifically, the marriage deferment increased the probability of marriage for 21 year olds by 15% and the overall probability of marriage by 1%. This translates to more than 17,000 early marriages at age 21 and 68,000 extra marriages. These results suggest that although individuals’ marital decisions are responsive to incentives, large incentives are required in order to affect them in any substantial way. Second, do these policies induce unstable marriages? I find that the marriage deferment is associated with a decrease in the probability of divorce.
References


Appendix A
Table 5: Coefficient Estimates, Vietnam War Era, White Men, 1956-1980

<table>
<thead>
<tr>
<th>Age</th>
<th>$\beta_t$</th>
<th>$\beta^*_t$</th>
<th>$\beta_{w,t}$</th>
<th>$\beta_t^r + \beta_{w,t}^r$</th>
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<tr>
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<td>-0.336***</td>
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<td>(0.040)</td>
<td>(0.091)</td>
<td>(0.076)</td>
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<td>-0.219***</td>
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<tr>
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<td>(0.025)</td>
<td>(0.029)</td>
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<td>(0.050)</td>
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<td>(0.027)</td>
<td>(0.040)</td>
<td>(0.040)</td>
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<td>0.094***</td>
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<tr>
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<td>(0.026)</td>
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<td>(0.036)</td>
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<td>(0.033)</td>
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<td>(0.038)</td>
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<tr>
<td>24</td>
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<td>0.115***</td>
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<tr>
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<td>(0.044)</td>
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<tr>
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<td>(0.024)</td>
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<td>(0.047)</td>
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<tr>
<td>26</td>
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<tr>
<td></td>
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<td>(0.053)</td>
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<td>27</td>
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<td>0.017</td>
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<td>(0.032)</td>
<td>(0.060)</td>
<td>(0.061)</td>
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<tr>
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<td>(0.076)</td>
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<td>(0.034)</td>
<td>(0.049)</td>
<td>(0.098)</td>
<td>(0.116)</td>
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</table>

N=9,046,901 ***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level
Figure 8: Vietnam War Marriage Deferment: Wartime
Figure 9: Vietnam War Marriage Deferment: Peacetime
Figure 11: Vietnam War Marriage Deferment: Women
Figure 12: Vietnam War Marriage Deferment: Men Who Attended College
Figure 13: Vietnam War Marriage Deferment: Men Who Did Not Attend College
Figure 14: Korean War Marriage Deferment: Wartime
Figure 15: Korean War Marriage Deferment: Peacetime
Figure 17: Korean War Marriage Deferment: Men Who Attended College
Figure 18: Korean Wa Marriage Deferment r: Men Who Did Not Attend College
Figure 19: WWII Marriage Deferment: 1940-1941
Figure 20: WWII Marriage Deferment: 1942-1943
Appendix A1
Characteristics of Spousal Immigrants by Admission Category Analysis uses NIS 2003 data for adults over the age of 18, excluding refugees, asylees and legalizations
Figure 1: All Spousal Immigrants vs. Spouses of U.S. Citizens

Figure 2: All Spousal Immigrants vs. Spouses of Legal Permanent Residents
Figure 3: All Spousal Immigrants vs. Parents of US Citizens

Figure 4: All Spousal Immigrants vs. Spouses of Siblings of US Citizens
Figure 5: All Spousal Immigrants vs. Spouses of Employment Preference Immigrants

Figure 6: All Spousal Immigrants vs. Spouses of Diversity Preference Immigrants
Figure 7: All Spousal Immigrants vs. Spouses of Married Children of US Citizens
Appendix A2:
Characteristics of Spousal Immigrants Compared to Their Spouses by Admission Category. Analysis uses NIS 2003 data for adults over the age of 17, excluding refugees, asylees and legalizations.
Figure 1: Native U.S. Citizens

Figure 2: Naturalized US Citizens
Figure 3: Legal Permanent Residents

Figure 4: Parents of US Citizens
Figure 5: Siblings of US Citizens

Figure 6: Employment Preference Immigrants
Figure 7: Diversity Preference

Figure 8: Married Children of US Citizens
11 Appendix A3
Double Employment Quota. Analysis uses NIS 2003 data for adults over the age of 17, excluding refugees, asylees and legalizations.
Figure 1: Distribution of Immigrant Characteristics: Double Employment Quota
Figure 2: Distribution of Immigrant Characteristics: Distribution of Immigrant Characteristics: Double Employment Quota

Figure showing the distribution of immigrant characteristics with education levels (None, <HS, HS, Assoc., BA/BS, Grad) and employment status (Baseline, Just Principal, Principal & Spouse). The graph indicates the percentage distribution across these categories, with education levels and employment status indicated on the x-axis and y-axis respectively, and the bars representing different employment quotas.
12 Appendix A4
Accompanying Spouses and Children Do Not Count Against The Quota. Analysis uses NIS 2003 data for adults over the age of 17, excluding refugees, asylees and legalizations
Figure 1: Distribution of Immigrant Characteristics: Double Accompanying Spouses and Children Do Not Count Against the Quota
Figure 2: Distribution of Immigrant Characteristics: Accompanying Spouses and Children Do Not Count Against the Quota