Divorce Laws and Divorce Rate in the U.S.*

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JOB MARKET PAPER

This Version: November 28, 2008

Abstract

At the end of the 1960s, the U.S. divorce laws underwent major changes and the divorce rate more than doubled in all of the states. The new laws introduced unilateral divorce in most of the states, and changes in divorce settlements, such as property division and child custody assignments in every state. Empirical literature has focused on the switch from consensual to unilateral divorce and found that this change cannot fully account for the increase in the divorce rate. What previous literature has ignored is other aspects of the legal change, and their effect on divorce rate in states where the decision remained consensual. In this paper I show that changes in divorce settlements provide economic incentives for both spouses to agree on divorcing. I solve and calibrate a model where agents differ by gender, and wages, and make marital status, investment, and labor supply decisions. Under the new financial settlements, divorced men gain from a favorable division of property, while women gain from an increase in joint child custody assignments. Since both of them are better off in the new divorce setting, the requirement of consent for divorce is not longer necessary. Results show that changes in divorce settlements account for a substantial amount of the increase in the divorce rate in both the unilateral and the consensual regime. I also find that the increase in divorce rate of young couples with children contributes the most in the overall increase, and this is consistent with the data.

JEL Classification: J12, D13, K36

Keywords: Divorce rate, unilateral and consensual divorce, divorce laws, property division, alimony and child support, child custody.

*I am grateful to Larry Jones and Alessandra Fogli for their continuous help and support. I thank V.V. Chari, Katya Kartashova, Ellen McGrattan, Pricila Maziero, and Fabrizio Perri for comments and suggestions. I am indebted to Kamila Vetechova for numerous useful discussions. All errors are mine.

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1 Introduction

At the end of the 1960s, the U.S. divorce laws underwent major changes and the divorce rate increased from 12.0 divorces in 1960 to 25.0 divorces per thousand of married females in 1980. The reform introduced unilateral divorce law in most of the states and changes in divorce settlements in every state. The results of the empirical literature on the effects of the legal changes on the divorce rate are controversial, and focused on the switch from consensual to unilateral divorce[1].

What previous literature ignored is the fact that the change in divorce rate occurred uniformly in all states regardless of whether the unilateral or consensual regime was adopted, and divorce settlements have been revised all across the U.S. The purpose of this paper is to evaluate the effect of the changes in financial settlements on the increase in the aggregate and age-specific divorce rate. The main changes in financial settlements include changes in child custody, fathers' visitation rights, and property division rule. In particular, the rule that favorers the mother as the custodial parent after divorce loses ground throughout the U.S. Today men and women have an equal right to custody in all states. Under the old fault-based law, the wife receives more than half of the community property. With the new no-fault law, community assets and liabilities are divided equally.

I provide a framework in which other aspects of the legal change matter. In particular, I modify a standard dynamic life-cycle model of household behavior to include divorce settlements and analyze the effect of the legal changes on the individuals' decisions of divorcing. In every period, married couples with and without children, decide whether or not to divorce. They cooperate when making decisions while married, but do not cooperate as they get divorced. Divorce occurs when a new draw of match quality makes both better off single than married. One important feature of the model is that agents solve different problems depending on the life-cycle stage they are in. In particular, I divide the life-cycle into three parts: in the first part, agents make time allocation decisions about labor market, child care and leisure; in the second part, agents are childless and choose the amount of time to allocate between labor market and leisure; in the last period, all of the agents are retired. In every period they choose how much capital to accumulate. I calibrate the model to 1970 U.S. data and use it to simulate the impact of the legal reform on divorce rate of married couples of different ages.

[1]Friedberg (1998) found that the switch to unilateral divorce accounts for 17% of the increase in divorce rate. Wolfers (2006) arrived at a different conclusion and found the increase in the divorce rate to be two-thirds the size of Friedberg (1998)'s finding.

I show that changes in divorce settlements create incentives for both spouses to agree on divorcing, neutralizing the difference between consensual and unilateral regime. Under the new regime, the gain from a favorable division of property for men offsets the loss of an increase child custody and child support payment requirements. Women gain from new child custody laws, which allow them to spend more time in the labor market, and this offsets the loss from the new reallocation rule of property. Results show that changes in divorce settlements account for a substantial amount of the increase in the divorce rate in both the unilateral and the consensual regime. I also find that the increase in divorce rate of young couples contributes the most to the overall increase, and this is consistent with the data. This last result is driven by the division of life-cycle in the three parts. In the first part, married couples benefit from both of the divorce settlements changes, as parents provide for child care, and accumulate capital. In the second and third part of their lifetime, children are not living in the parental house anymore, and the legal reform only affects the division of capital at time of divorce.

The rest of the paper is organized as follows. In the next section I document the pattern of divorced rate observed in the data, and empirical evidence of the changes in divorce settlements. Section 3 describes the model. Section 4 explains how the model is implemented and presents results.

2 Empirical Evidence

From the end of the 1960s to the beginning of the 1980s, the divorce rate increased from 12 divorces to 25 divorces per thousands of married females 15 years and older[2]. Figure 1, show the increase in divorce rate and the time frame in which the legal reform took place.

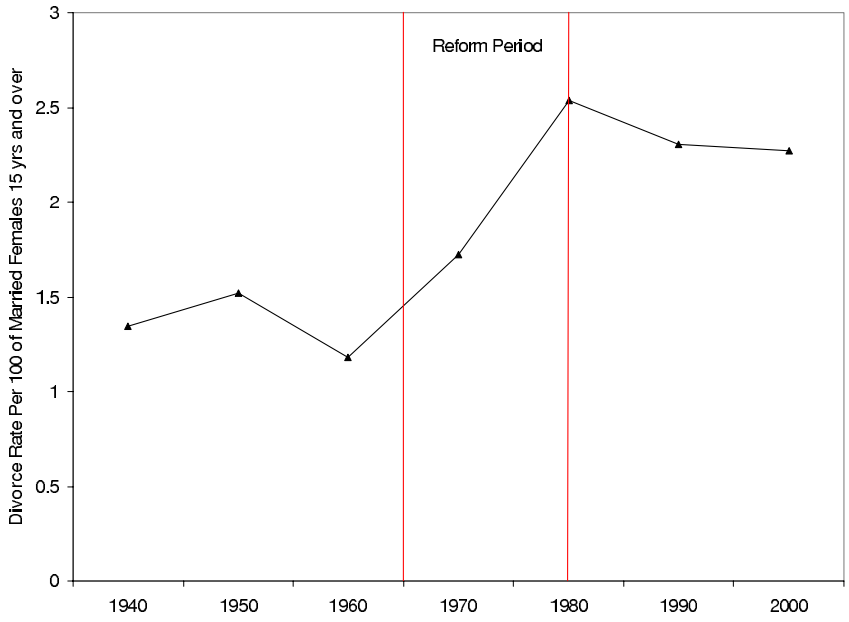

Figure 1: Divorce Rates. Source: National Center for Health Statistics

This aggregate measure does not reveal age differences in the divorce rate, and it does assume a standardized age structure of women at risk. A more precise measure is given by the age-specific divorce rate, and data are shown in Figure 2. The data show that rates increased from 1970 to 1980 with the most dramatic increase occurring in the 20 to 44 age groups. The 50 and over groups show no change in this decade. In the Appendix I provide the details about the states included in the computation of the rate.

The increase in the divorce rate coincides with the introduction of the Uniform Marriage and Divorce Act promulgated in 1970 introduced revolutionary changes in family law at a federal level. The Act introduced three main changes:

(i) the irretrievable breakdown as a ground for no-fault divorce and the unilateral decision to divorce;

[2]The divorce rate is computed as the ratio between the total number of divorces in a particular year and the total number of married females that are 15 years and over in the same year.

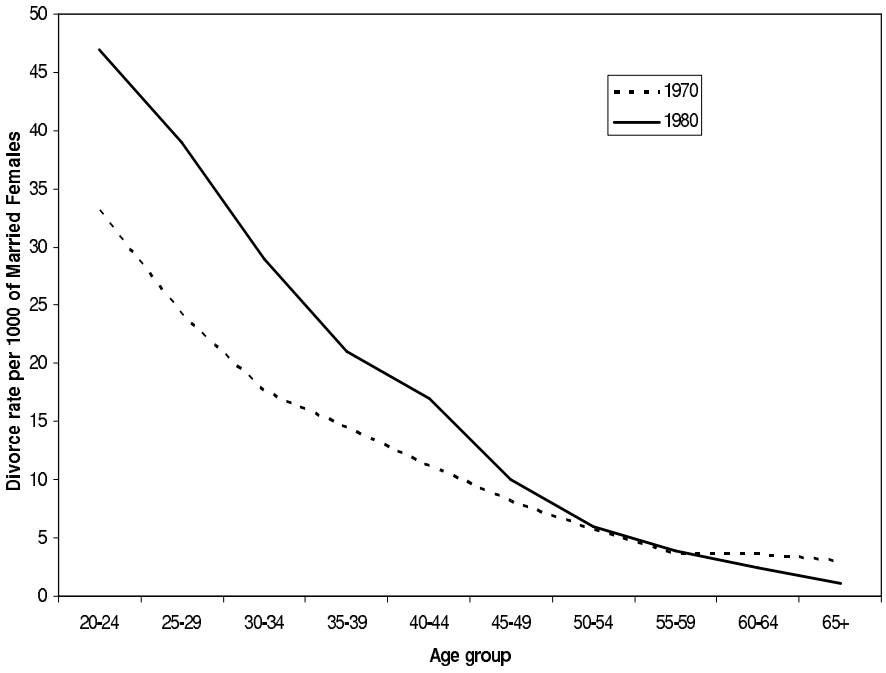

Figure 2: Age-specific Divorce Rates. Source: Kunz and England (1988)

(ii) the equitable division of property; and

(iii) new rules in terms of child custody and child support.

Prior to the no-fault divorce revolution, a divorce could be obtained only through a showing of fault of one of the parties in a marriage. California was the first state to implement the no-fault ground divorce, and nowadays all of the states have eliminated fault as a ground for divorce. Not all of the states have yet introduced the unilateral divorce regime: in seventeen[3] out of fifty-one states both of the parties have to express their willingness to divorce.

The legal reform also introduced changes about child custody and property division aiming to a more gender neutral legislation. According to Weitzman (1985), in 1968 the wife who was usually declared as the "innocent" party, was awarded by more than half of the total property value. Data in table 1 shows that in only 12% of the cases the property was divided equally. Under the new law, the number of cases in which the property were equally divided increased substantially. By the end of the 1970s, the equal division became

[3]The states that have not yet adopted the unilateral law are the following: Arkansas, District of Columbia, Illinois, Louisiana, Maryland, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, and West Virginia.

the norm[4].

Table 1: Division of Property in San Francisco County - Evidence from a random sample of court dockets. Source: Weitzman (1985)

	1968	1972
Majority to Husband (over 60%)	2%	7%
Approx. Equal Division (40 to 60%)	12%	59%
Majority to Wife (over 60%)	86%	34%
Mean percentage to Wife	**91**%	**62**%

Changes in divorce law made child custody assignments more gender neutral. Mothers would not be the automatic custodian parents, but also the fathers could have been considered as such. Data collected by Census shows that during the 1950s, only 1 out of 1,000 children lived with their fathers after divorce. By the end of 1980s, about 1.3% of children lived with the divorced fathers. Table 2 shows the percentage of cases in which mothers and fathers obtained sole or joint custody for divorces occurred after 1968. The second part of the table provide information on fathers' visitation arrangements. See Appendix for details on the sample considered.

Table 2: Custody and Visitation Rights in 1986. Source: NLS of the High School Class of 1972 (Fifth Follow-up)

Mothers are sole custodians	85.7%
Fathers are sole custodians	3.2%
Joint custody	6.6%
Other arrangements	4.5%
Fathers' visitation rights:	
once a week or more	19.6%
twice a month	24.7%
once a month/during vacations/no specific time	50%
no visitations allowed	5.7%

[4]The average percentage of wealth inherited by the wife after divorce in sample data from the National Longitudinal Study (NLS) of the High School Class of 1972 (Fifth Follow-up, 1986) is about 58%.

3 The Model

In this section I develop a dynamic life-cycle model in which in every period married couples decide whether to remain married or divorce. The timing of the model is shown in the following figure.

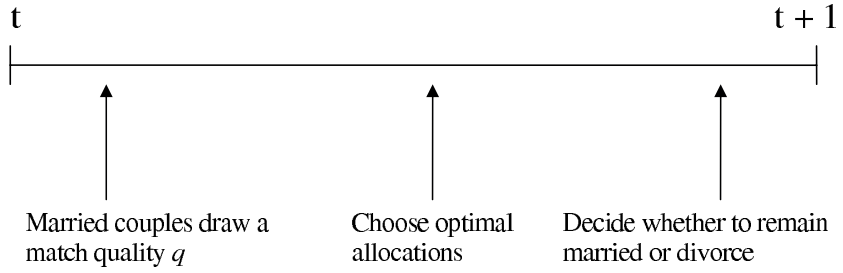

Figure 3: Time line

In each period t, for $t = 1, ...T_3$, a married couple draws a match quality, chooses allocations, and then consensually decide whether to stay married or divorce in period t. Divorce is an absorbing state. If an agent enters period t as divorced, or decides to divorce in t, she will be divorced from that time t on. Husband and wife cooperate when making decisions, but each agent behaves non cooperatively if divorced. That is, a divorced person chooses its optimal allocations taking as given the optimal choices of the divorced partner. The only source of uncertainty in the model is the quality of the match.

To analyze the effect of the change in divorce law on agents at different stages of their life time, I divide the life cycle in three parts, as shown in Figure 4.

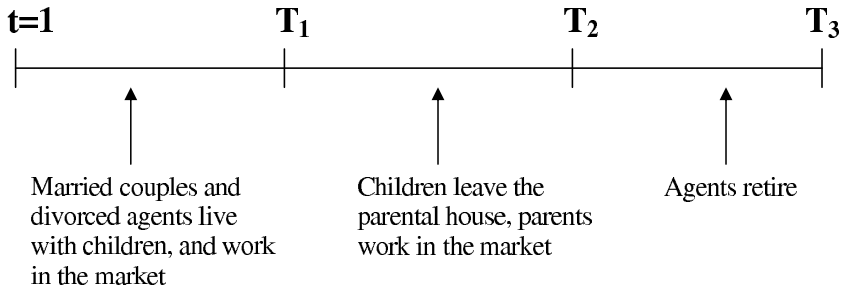

Figure 4: Life-cycle of Married Couples

In every period agents can choose the amount of income to invest in risk-free assets. No borrowing is allowed. In the first part (from $t = 1$ to T_1), married couples live with

their children, and spend part of their time in the labor market. In the second part of their life (from T_1 to T_2) agents work in the market, but children do not live at home anymore. Finally (from T_2 to T_3) they retire, and choose how much to consume and invest. There is not social security, and agents die with certainty at time T_3. The life-cycle of the divorced agents are set up accordingly to this timing of events. For the remaining of the paper, the subscripts f and m denotes female and male.

Consider the last period T_3. Here, agents' income is given by savings from previous periods. The adults' consumption is denoted by c_t^i, and leisure is denoted by l_t^i. Married agents solve the following collective problem:

$$\begin{aligned} V^M\left(b_{T_3}, q_{T_3}\right) &= \max_{\left\{c_{T_3}^i, l_{T_3}^i\right\}} \mu_i \sum_{i=f,m} \left(\log c_{T_3}^i + \delta_l \log l_{T_3}^i\right) + q_{T_3} \\ s.t. &: c_{T_3}^f + c_{T_3}^m \leq (1+r)\, b_{T_3} \\ &: 0 \leq l_{T_3}^i \leq 1 \ \forall i = f, m \\ &: b_{T_3+1} = 0 \\ &: c_{T_3}^i \geq 0 \ \forall i = f, m \end{aligned}$$

where μ_i is the decision power of spouse i, with $\sum_i \mu_i = 1$, and δ_l is the utility weight on leisure. The total individual amount of time available is normalized to 1. The return on risk free assets is denoted by r, and is constant over time. Let $\left\{\hat{c}_T^i, \hat{l}_T^i\right\}$ for $i = f, m$ be the solution of the couple's problem. Agent i's value of being married at the decision power μ_i can be computed as follows:

$$V^{M,i}\left(b_T, q_T\right) = \log \hat{c}_{T_3}^i + \delta_l \log \hat{l}_{T_3}^i + q_{T_3}$$

The value of being divorced for agent m can be computed by solving the following problem:

$$\begin{aligned} V^{D,m}\left(xb_{T_3}\right) &= \max_{\left\{c_{T_3}^m, l_{T_3}^m\right\}} \log c_{T_3}^m + \delta_l \log l_{T_3}^m \\ s.t. &: c_{T_3}^m \leq (1+r)\, xb_{T_3} - al_{T_3} \\ &: 0 \leq l_{T_3}^m \leq 1 \\ &: b_{T_3+1}^m = 0 \\ &: c_{T_3}^m \geq 0 \end{aligned}$$

where xb_{T_3} is fraction of assets inherited from the marriage and $x \in [0, 1]$ is the property

division rule set by the law. Divorced men transfers an amount al_{T_3} as alimony payment to the previous wife.

Similarly for females f, the value of being divorced can be computed by solving the following problem:

$$\begin{aligned} V^{D,f}\left(xb_{T_3}\right) &= \max_{\left\{c^f_{T_3}, l^f_{T_3}\right\}} \log c^f_{T_3} + \delta_l \log l^f_{T_3} \\ s.t. &: c^f_{T_3} \leq (1+r)\, xb_{T_3} + al_{T_3} \\ &: 0 \leq l^f_{T_3} \leq 1 \\ &: b^f_{T_3+1} = 0 \\ &: c^f_{T_3} \geq 0 \end{aligned}$$

If the value of being married is higher than the value of being divorced for at least one of the two agents, they will stay married. If the value of being divorced is higher for both of the spouse, it will be optimal to divorce[5]. To summarize, agent i's value in period T_3 is:

$$V^i\left(b_{T_3}, q_{T_3}\right) = \begin{cases} V^{M,i}\left(b_{T_3}, q_{T_3}\right) & \text{if } V^{M,i}\left(b_{T_3}, q_{T_3}\right) \geq V^{D,i}\left(xb_{T_3}\right) \text{ or } V^{M,j}\left(b_{T_3}, q_{T_3}\right) \geq V^{D,j}\left(xb_{T_3}\right) \\ V^{D,i}\left(xb_{T_3}\right) & \text{if } V^{D,i}\left(xb_{T_3}\right) > V^{M,i}\left(b_{T_3}, q_{T_3}\right) \text{ and } V^{D,j}\left(xb_{T_3}\right) > V^{M,j}\left(b_{T_3}, q_{T_3}\right) \end{cases}$$

Given agent i's value in period T_3, the decision process in any arbitrary period $t \in [1, T_3 - 1]$ can be outlined. In periods $t \in (T_2, T_3 - 1]$ agents are retired and only choose how much to consume and invest. The value of being married in period $t \in (T_2, T_3 - 1]$ is:

$$\begin{aligned} V^M\left(b_t, q_t\right) &= \max_{\left\{c^i_t, l^i_t, b_{t+1}\right\}} \sum_{i=f,m} \mu_i \left[\log c^i_t + \delta_l \log l^i_t\right] + q_t + \beta E \sum_{i=f,m} \mu_i \left[V^i_{t+1}\left(b_{t+1}, q_{t+1}\right) | q_t\right] \\ s.t. &: c_t \leq (1+r)\, b_t - b_{t+1} \\ &: 0 \leq l^i_t \leq 1 \ \forall i = f, m \\ &: b_{t+1} \geq 0, c^i_t \geq 0 \ \forall i = f, m \end{aligned}$$

where β is the discount rate. The value of being divorced in period $t \in (T_2, T_3 - 1]$ for agent

[5]Note that the decision to divorce is consensual. In a framework where the unilateral divorce is allowed, the willingness of one of the spouses is sufficient to divorce.

m is:

$$\begin{aligned} V^{D,m}\left(xb_t\right) &= \max_{\left\{c_t^m, l_t^m, b_{t+1}^m\right\}} \log c_t^m + \delta_l \log l_t^m + \beta V^{D,m}\left(b_{t+1}^m\right) \\ s.t. &: c_t^m \leq (1+r)\, xb_t - b_{t+1}^m - al_t \\ &: 0 \leq l_t^m \leq 1 \\ &: b_{t+1}^m \geq 0, c_t^m \geq 0 \end{aligned}$$

The value of being divorced in period $t \in (T_2, T_3 - 1]$ for agent f is:

$$\begin{aligned} V^{D,f}\left(xb_t\right) &= \max_{\left\{c_t^f, l_t^f, b_{t+1}^f\right\}} \log c_t^f + \delta_l \log l_t^f + \beta V^{D,f}\left(b_{t+1}^f\right) \\ s.t. &: c_t^f \leq (1+r)\, xb_t^f - b_{t+1}^f + al_t \\ &: 0 \leq l_t^f \leq 1 \\ &: b_{t+1}^f \geq 0, c_t^f \geq 0 \end{aligned}$$

Agent i's value in any period $t \in (T_2, T_3 - 1]$ is:

$$V_{t+1}^i = \begin{cases} V^{M,i}\left(b_{t+1}, q_{t+1}\right) & \text{if } V^{M,i}\left(b_{t+1}, q_{t+1}\right) \geq V^{D,i}\left(b_{t+1}\right) \text{ or } V^{M,j}\left(b_{t+1}, q_{t+1}\right) \geq V^{D,j}\left(b_{t+1}\right) \\ V^{D,i}\left(b_{t+1}\right) & \text{if } V^{D,i}\left(b_{t+1}\right) > V^{M,i}\left(b_{t+1}, q_{t+1}\right) \text{ and } V^{D,j}\left(b_{t+1}\right) > V^{M,j}\left(b_{t+1}, q_{t+1}\right) \end{cases}$$

where:

$$\begin{aligned} V^{M,i}\left(b_t, q_t\right) &= \log \hat{c}_t^i + \delta_l \log \hat{l}_t^i + q_t + \beta E\left[V_{t+1}^i\left(b_{t+1}, q_{t+1}\right) | q_t\right] \\ V^{D,i}\left(b_t\right) &= \log \hat{c}_t^i + \delta_l \log \hat{l}_t^i + q_t + \beta V^{D,i}\left(b_{t+1}\right) \end{aligned}$$

In every period $t \in (T_1, T_2 - 1]$, agents spend part of their time endowment in the labor market. The units of time worked in the market are denoted by h_t^i, and w_t^i are the wage rates. The value of being married in period $t \in (T_1, T_2 - 1]$ is:

$$\begin{aligned} V^M\left(b_t, q_t\right) &= \max_{\left\{c_t^i, l_t^i, h_t^i, b_{t+1}\right\}} \sum_{i=f,m} \mu_i \left[\log c_t^i + \delta_l \log l_t^i\right] + q_t + \beta E_q \sum_{i=f,m} \mu_i \left[V^i\left(b_{t+1}, q_{t+1}\right) | q_t\right] \\ s.t. &: c_t^f + c_t^m \leq w_t^f h_t^f + w_t^m h_t^m + (1+r)\, b_t - b_{t+1} \\ &: l_t^i + h_t^i \leq 1 \ \forall i = f, m \\ &: b_{t+1} \geq 0, c_t^i \geq 0, l_t^i \geq 0, h_t^i \geq 0 \end{aligned}$$

The value of being divorced in period $t \in (T_1, T_2 - 1]$ for agent m is:

$$\begin{aligned} V^{D,m}(xb_t) &= \max_{\left\{c_t^m, l_t^m, h_t^m, b_{t+1}^m\right\}} \log c_t^m + \delta_l \log l_t^m + \beta V^{D,m}\left(b_{t+1}^m\right) \\ s.t. &: c_t^m \leq w_t^m h_t^m + (1+r)\, xb_t - b_{t+1}^m - al_t \\ &: l_t^m + h_t^m \leq 1 \\ &: b_{t+1}^m \geq 0, c_t^m \geq 0, l_t^m \geq 0, h_t^m \geq 0 \end{aligned}$$

The value of being divorced in period $t \in (T_1, T_2 - 1]$ for agent f is:

$$\begin{aligned} V^{D,f}(xb_t) &= \max_{\left\{c_t^f, l_t^f, h_t^f, b_{t+1}^f\right\}} \log c_t^f + \delta_l \log l_t^f + \beta V^{D,f}\left(b_{t+1}^f\right) \\ s.t. &: c_t^f \leq w_t^f h_t^f + (1+r)\, xb_t - b_{t+1}^f + al_t \\ &: l_t^f + h_t^f \leq 1 \\ &: b_{t+1}^f \geq 0, c_t^f \geq 0, l_t^f \geq 0, h_t^f \geq 0 \end{aligned}$$

The values of being married and divorced at $t \in (T_1, T_2 - 1]$ for each agents $i = f, m$ can be computed as above.

During the first part of their life cycle, agents allocate their time between market, child care, and leisure. I abstract from fertility decision and assume that each married couple has one child. Children's consumption is denoted by c_t^k. Moreover, δ_i denotes the agent-specific utility weight on time spent with the child (or degree of altruism of each parent). I assume that households start their life cycle with zero assets. The problem solved by a married couple is:

$$\begin{aligned} V^M(b_t, q_t) &= \max_{\left\{c_t^i, c_t^k, l_t^i, h_t^i, t_t^i, b_{t+1}^i\right\}} \sum_{i=f,m} \mu_i \left\{\log c_t^i + \log c_t^k + \delta_l \log l_t^i + \delta_i \log\left(t_t^f + t_t^m\right)\right\} + q_t \\ &\quad + \beta E_q \sum_{i=f,m} \mu_i V^i\left(b_{t+1}, q_{t+1}\right) \\ s.t. &: c_t^f + c_t^m + c_t^k \leq w_t^f h_t^f + w_t^m h_t^m + (1+r)\, b_t - b_{t+1} \\ &: l_t^i + h_t^i + t_t^i \leq 1 \ \forall i = f, m \\ &: t_t^f + t_t^m \geq \underline{t}_t \\ &: b_1 \text{ given} \\ &: c_t^i \geq 0, c_t^k \geq 0, l_t^i \geq 0, h_t^i \geq 0, t_t^i \geq 0, b_{t+1}^i \geq 0 \ \forall i = f, m \end{aligned}$$

where $\underline{t}_t$ is the minimum amount of time that the parents spend in child care.

In case of divorce, the father transfers alimony to the wife, and bears part of the expenditure on the children through the payment of child support cs_t. He solves the following problem:

$$\begin{aligned} V^{D,m}(xb_t) &= \max_{\{c_t^m, l_t^m, h_t^m, t_t^m, b_{t+1}^m\}} \log c_t^m + \delta_l \log l_t^m + \delta_m \log\left(\hat{t}_t^f + t_t^m\right) + \beta V^{D,m}\left(b_{t+1}^m\right) \\ s.t. &: c_t^m \leq w_t^m h_t^m - a l_t - cs_t + (1+r)\, xb_t - b_{t+1}^m \\ &: l_t^m + h_t^m + t_t^m \leq 1 \\ &: t_t^m \geq \underline{t}_t^m \\ &: xb_1 \text{ given} \\ &: c_t^m \geq 0, l_t^m \geq 0, h_t^m \geq 0, t_t^m \geq 0, b_{t+1}^m \geq 0 \end{aligned}$$

where $\underline{t}_t^m$ is the amount of time that the father is required to spend with the child by the child custody law (joint custody or visitation rights). The father solves the maximization problem taking as given the optimal choice of time to spend with child made by the mother $\hat{t}_t^f$.

The problem of a divorced mother is the following:

$$\begin{aligned} V^{D,f}(xb_t) &= \max_{\{c_t^f, c_t^k, l_t^f, h_t^f, t_t^f, b_{t+1}^f\}} \log c_t^f + \log c_t^k + \delta_l \log l_t^f + \delta_f \log\left(t_t^f + \hat{t}_t^m\right) + \beta V^{D,f}\left(b_{t+1}^f\right) \\ s.t. &: c_t^f + c_t^k \leq w_t^f h_t^f + a l_t + cs_t + (1+r)\, xb_t - b_{t+1}^f \\ &: l_t^f + h_t^f + t_t^f \leq 1 \\ &: t_t^f \geq \underline{t}_t^f \\ &: xb_1 \text{ given} \\ &: c_t^f \geq 0, c_t^k \geq 0, l_t^f \geq 0, h_t^f \geq 0, t_t^f \geq 0, b_{t+1}^f \geq 0 \end{aligned}$$

The mother solves the maximization problem taking as given the optimal choice of time to spend with child made by the father $\hat{t}_t^m$.

3.1 Equilibrium

Given wage rates $\left\{w_t^f, w_t^m\right\}_{t=1,..,T_2}$, risk-free return from assets r and initial assets $b_1 = 0$, an equilibrium for this economy is:

(a) a set of decision rules of married agents for:

- consumption: $\left\{\hat{c}_t^f(b_t, q_t), \hat{c}_t^m(b_t, q_t)\right\}_{t=1,..,T_3}$
- leisure: $\left\{\hat{l}_t^f(b_t, q_t), \hat{l}_t^m(b_t, q_t)\right\}_{t=1,..,T_3}$
- hours worked in the market: $\left\{\hat{h}_t^f(b_t, q_t), \hat{h}_t^m(b_t, q_t)\right\}_{t=1,..,T_2}$
- child-care time: $\left\{\hat{t}_t^f(b_t, q_t), \hat{t}_t^m(b_t, q_t)\right\}_{t=1,..,T_1}$
- investment in risk-free assets: $\left\{\hat{b}_{t+1}(b_t, q_t)\right\}_{t=1,..,T_3}$

(b) a set of decision rules of divorced agent $i = f, m$, with $j \neq i$, for:

- consumption: $\left\{\hat{c}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=1,..,T_3}$
- leisure: $\left\{\hat{l}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=1,..,T_3}$
- hours worked in the market: $\left\{\hat{h}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=1,..,T_2}$
- child-care time: $\left\{\hat{t}_t^i(b_t^i, \hat{t}_t^j)\right\}_{t=1,..,T_1}$
- investment in risk-free assets: $\left\{\hat{b}_{t+1}^i(b_t^i, \hat{t}_t^j)\right\}_{t=1,..,T_3}$

such that:

(1) agents maximize

(2) $\hat{b}_{T_3+1}(b_{T_3}, q_{T_3}) = 0$ and $\hat{b}_{T_3+1}^i(b_{T_3}^i, \hat{t}_{T_3}^j) = 0 \ \forall i, j = f, m$

4 Calibration

The model period is twenty years. At the beginning of the first period all agents are married and of age 20 ($t = 0$). They work and provide consumption for the child until age 40 ($t = 1$). They retire at age 60 ($t = 2$), and die for sure at age 80 ($T = 3$).
To measure the impact of the changes in divorce settlements on the decision to divorce, the model is calibrated to the U.S. age-specific divorce rates of 1970. To match the targeted moments, I calibrate three parameters that characterize the idiosyncratic stochastic process of the match quality, and I take other parameters from the data. Table 3 lists part of the exogenous parameters of the model.

Table 3: Exogenous Parameters

Parameter	Description	Value
r	Interest rate	0.04
$\beta^{20years}$	Discount rate $(1/(1+r))^{20years}$	0.456
μ_i	Pareto weight	0.5
δ_l	Weight on leisure	0.5
δ_f	Mothers' weight on child care time	0.7
δ_m	Fathers' weight on child care time	0.4
h^m	Men's labor supply	0.25
w_t^m	Men's wage rates	w_1^m=4, w_2^m=4.172
w_t^f	Women's wage rates	w_1^f=2.763, w_2^f=2.566

Following Aiyagari, Greenwood, and Guner (2000), I choose the weight on child care time to be higher for mothers than for fathers. For this benchmark model, I assume that the fraction of time worked on the market by men is fixed to 0.25, regardless of the marital status. To determine the wage rates, I normalize the labor earnings of men of age 20-39 to 1. Next, I compute the average hourly wages from the Current Population Survey of 1970 to determine the average wage rate of the age group 40-59. Given the wage rates of men, I use the average female-male wage ratio to pin down the average wage rates of women in the two age groups.

Table 4 lists the exogenous parameters that characterized the divorce settlements.
The lower bound on child care time for married parents and divorced mothers is set accordingly to Haveman and Wolfe (1995). Alimony and child support payments are computed from Current Population Survey of 1970 and are set to be fractions of the income of divorced males in the youngest age-group. Note that in the first stage of the life cycle, the

Table 4: Exogenous Parameters - Contd.

Parameter	Description	Value
x	Fraction of property to wife	0.90
$\underline{t}_t, \underline{t}_t^f$	Minimum child care time	0.15
$\underline{t}_t^m$	Minimum child care time	0
$al_1 + cs_1$	Alimony and Child support payment	$al_1 + cs_1$=0.234
al_2, al_3	Alimony payment	al_2=0.2, al_3=0.155

husband transfers both child support and alimony; in the second and third part, the wife only receive alimony payment. Summary statistics of the sample considered are available in the Appendix.

4.1 Match Quality

I assume that the match quality evolves according to the following stochastic process:

$$q_t = q_0 + \epsilon_t$$

where ϵ_t is a persistent shock received every period, and that follows a first-order autoregression:

$$\epsilon_t = (1-\rho)\mu + \rho\epsilon_{t-1} + \varphi_t \text{ with } \varphi_t \sim N(0, \sigma_\epsilon^2) \text{ and } \epsilon_1 = 0$$

In the calibration, the mean, the variance and the persistence parameters are chosen simultaneously so that the simulated age-specific divorce rates equal their value data. Parameter values are reported in Table 5.

Table 5: Calibrated Parameters

	Benchmark	Data
Divorce rate age 20-39	22.0	22.35
Divorce rate age 40-59	7.0	7.2
Divorce rate age 60+	3.3	3.4
μ	0.974	
σ_ϵ^2	6.196	
ρ	0.932	

5 Experiment and Results

The model is used to conduct experiment that address the question in this paper.

5.1 The Impact of the *Uniform Marriage and Divorce Act*

The experiment measures how much the changes in both property division and child custody contributed to the increase in age-specific divorce rate. In particular, I set consistently with the empirical evidence (a) the property division rule to be 58% in favor of the wife, (b) the lower bound on child care time for divorced parents to be equal to 0.075.
The results are summarized in the following table. The model predicts that changes in property division and child custody would have caused the divorce rate of young couples to increase by 36.36% from 22 to 30 per thousand. The divorce rate of middle-age couples increases by 12.86%. The legal changes thus account for about 70% of the increase in divorce rate of young couples, and for about 46% of the increase in divorce rate of middle-age couples. The model does not predict any change in divorce rate for the last age group.

Table 6: The Impact of Divorce Settlement Changes on Age-specific Divorce Rate

Age group	Before (1970)	After (1980)	Change
20-39 (Data)	22.35	34.0	51.45%
20-39 (Model)	22.0	30.0	36.36%
40-59 (Data)	7.2	9.225	28.12%
40-59 (Model)	7.0	7.9	12.86%
60+ (Data)	3.4	1.8	-47.06%
60+ (Model)	3.3	3.3	0

The change in either the property division rule or the child custody assignment by itself has little impact on the divorce rate, as it leads to a gain for only one of the spouses. Since the decision to divorce is consensual, one change alone would not generate the agreement. The results are also shown in Figure 5.

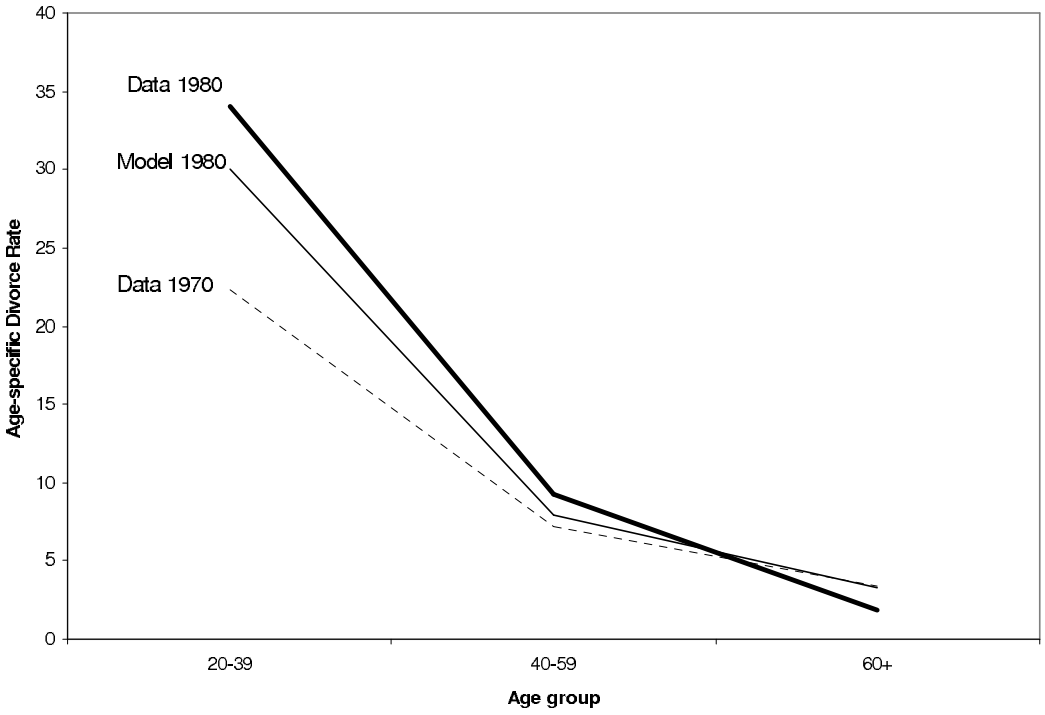

Figure 5: Age-specific Divorce Rate: Data vs Model

6 Conclusions

At the end of 1960s, divorce law underwent major changes. This paper assesses the quantitative impact of changes in divorce settlements on the divorce rate. Unlike the existing empirical literature, I do not consider the change to unilateral divorce, and show that changes in the divorce settlements contribute to a substantial increase in divorce rate. In particular, together changes in child custody assignments and division of property account for 70% of the increase in divorce rate of couples in the age group 20-39, and for 46% of the increase in divorce rate of couples of age 40 to 59. Moreover, the relative changes in age-specific divorce rate predicted by the model are consistent with the data.

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A Numerical solution and Algorithm

I solve the model by backward induction. Consider any arbitrary period. Each couple enters the period with a stock of assets, and a certain match quality. They draw a new match quality, and choose allocations for the case they remain married, and the case they get divorced. For each agent, I evaluate the level of utility associated with the two marital status. The level of utility conditional on marital status is computed by checking all of the possible alternatives for consumption, labor supply, time to spend with children, and saving. For each possible choice, I select the one that yields the highest level of utility. If at least one of the spouses prefers to stay married, then they remain married; if both of them prefers to divorce, they will divorce.

The presence of a discrete choice (decision to divorce) and several continuous decision variables like labor supply, time spent with children and saving implies that the value function of the married agents is not necessarily concave or differentiable. To solve the problem I discretize the continuous choice variables. The grid for time allocation decisions includes hundred equally spaced points in the interval $[0, 1]$. Wealth is described by a hundred point uniform grid in the interval $[0, 8]$.

The solution of the model is characterized by policy functions. For every state of the world, the policy functions returns the optimal choices for marital status, consumption, allocation of time between the market and the children, and saving. The policy functions are used to simulate the shock histories for 1,000 married couples. Using the simulated histories and the optimal decision rules, I compute the target moments for the model economy. I proceed by minimizing the sum of the square difference between the target and the simulated moments. The procedure is called Downhill Simplex, and does not require the calculation of derivatives.

B Data

Table 7 shows summary statistics for the Current Population sample data of the year 1970 used to compute the yearly alimony and child support payments[6]. For alimony and child support transfers, I select a sample of divorced and separated females with one children present in the household, of age 20 to 39, and that are in the labor force.

Table 7: Summary Statistics - Current Population Survey 1970 (Sample with positive alimony and child support payments)

Variables	Mean	Std. Dev.
Age group 20-39 (n=78)		
Alimony and Child Support	2,365.82	1,844.48
Females' Labor Income	11,955.98	6,908.11
Males' Labor Income	18573.44	10890.99
Age group 40-59 (n=67)		
Alimony	3,724.023	3,3339.88
Females' Labor Income	13,083.57	11,787.91
Males' Labor Income	19082.32	13977
Age group 60+ (n=35)		
Alimony	3,159.13	2,363.024

Data on custody in Table 2 are taken from the National Longitudinal Survey High School Class 1972 (Fifth Follow-up). The sample includes all mothers who have been married and divorced at least once. All of them are in the age group 30 to 40. In questions 67 and 68 of the survey (variable FI167 and FI168), respondents are asked to provide information about child custody and visitation agreement.
The percentage of properties allocated to wife after divorce is also computed using data from NLS-72. More precisely, I analyze the answers given in question 62A (var. FI62A) and question 62B (var. FI162B). For each respondent, those variables provide the (intervalled) amount of properties received by themselves and by the spouse.

Table 8 reports the age-specific divorce rates for the states for which the data were available in both 1970 and 1980.

[6]All of the figures are deflated using the Consumer Price Index (1982-1984=100).

Table 8: Age-specific Divorce Rates. Source: Kunz and England (1988)

State	Year	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
HA	1970	28.6	24.8	19.5	16.5	12.8	10.2	7.5	3.8	3.3	2.2
	1980	45.5	40.2	30.1	23.2	16.2	11.0	5.2	4.0	2.9	1.2
IL	1970	34.5	25.6	19.2	15.3	11.7	8.2	5.6	3.5	2.1	1.1
	1980	50.5	37.6	27.7	22.0	16.1	9.9	6.9	3.5	2.3	1.2
KA	1970	42.5	30.5	20.1	16.5	11.8	8.9	6.2	3.7	2.3	1.4
	1980	54.6	42.1	32.6	25.9	18.8	11.4	6.3	3.9	2.5	1.7
MD	1970	19.8	18.1	13.2	10.9	8.4	6.3	4.7	2.6	2.1	0.9
	1980	36.4	35.2	26.0	19.7	15.0	9.9	6.4	3.7	2.5	1.1
MT	1970	52.3	32.4	22.3	19.6	16.1	9.9	5.9	5.0	4.7	1.5
	1980	58.0	43.5	35.4	29.4	23.4	16.3	9.6	11.8	0.9	0.0
NE	1970	30.5	18.3	13.5	10.2	8.8	6.5	3.5	1.9	1.3	0.8
	1980	40.1	31.3	24.2	20.1	15.8	9.3	5.3	3.6	1.9	1.0
OR	1970	46.7	31.6	25.3	21.4	16.5	10.2	7.6	5.4	3.2	1.6
	1980	63.4	50.1	38.9	33.9	24.6	15.4	9.6	6.9	4.1	2.7
RI	1970	19.3	16.5	11.6	9.9	7.1	5.1	2.6	2.3	1.4	0.6
	1980	39.2	32.8	26.7	22.3	15.3	9.7	5.3	3.6	2.2	0.6
SC	1970	20.2	16.5	12.5	9.8	7.4	5.5	3.6	1.8	1.8	0.1
	1980	39.9	33.1	24.7	20.2	13.6	9.7	6.4	3.9	2.6	1.3
TN	1970	42.2	29.5	21.1	17.1	12.6	9.9	7.4	4.0	3.2	1.6
	1980	66.0	48.8	35.5	27.8	19.9	12.8	8.4	5.2	3.9	3.6
TX	1970	43.5	30.8	22.0	19.4	14.7	11.6	7.9	5.3	3.8	2.2
	1980	61.1	48.6	36.7	29.8	21.8	14.5	9.4	6.3	4.1	2.5
UT	1970	32.8	27.1	17.8	15.8	10.5	8.2	6.8	3.8	1.9	1.3
	1980	40.7	34.0	27.7	8.6	17.2	11.8	6.7	4.3	2.7	2.5
VT	1970	24.6	19.6	15.7	11.6	8.3	8.1	3.7	2.8	1.4	0.7
	1980	45.0	42.7	35.1	29.7	20.3	14.4	6.5	4.3	2.8	1.4
VA	1970	22.1	18.4	14.1	10.9	8.9	6.5	5.0	3.1	2.2	1.2
	1980	36.5	35.4	26.5	20.6	15.8	10.7	6.9	4.2	2.6	1.3
WV	1970	28.1	27.1	16.8	13.8	12.1	9.8	8.5	5.9	5.5	2.8
	1980	47.1	32.7	25.8	20.3	14.2	10.1	5.8	3.7	4.9	0.0
Total	1970	33.1	24.2	17.6	14.5	11.2	8.2	5.7	3.7	3.7	3.1
	1980	47.0	39.0	29.0	21.0	17.0	10.0	6.0	3.9	2.5	1.1