WHEN HOMEMAKERS ARE COMPENSATED: A STUDY OF THE EFFECTS OF HOMEMAKING PROVISION IN PROPERTY DIVISION FOLLOWING DIVORCE

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ABSTRACT. This paper studies the effects of the homemaking provision in family law that gives recognition to the contribution of homemakers in marriage in the division of properties accumulated during marriage at divorce. I develop a non-cooperative bargaining framework to analyze the effects of the provision on the time allocation and investment decisions in household public goods of spouses. The major implication from the model is that homemakers are more likely to devote more time to home production and reduce their market labor supply with the homemaking provision. The empirical findings are consistent with the above hypothesis, particularly for wives residing in states under the unilateral divorce regime. This suggests that the unilateral divorce reform might have brought changes to the decision making process of married couples and led them to behave less co-operatively. I also find evidence that the homemaking provision stimulates marriage but alters the composition of the pool of individuals that marry. This selection effect tends to induce more divorce. On the net, marriage rates have been raised by at least 5.9 percent in states that have implemented the provision for over 26 years.

JEL Classification: K00, J12, J22

Key Words: bargaining, divorce law, homemakers marriage, household specialization, housework, labor supply, property division

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1. Introduction and Literature Review

The financial distress of divorced women in the United States since the no-fault divorce reform in the 1970s has been well documented (see Weitzman 1985). In particular, women who have withdrawn from the labor force or reduced their labor supply for the maintenance of their family as homemakers are especially hard-hit by divorce (Starnes 1993). When divorce was fault-based and required mutual consent, the settlement was typically negotiated so that women were in a better bargaining position. Unilateral divorce allows either spouse to terminate the marriage at will. The wife, in the past usually the innocent party is no longer compensated for the fault of the husband and maintenance has become merely an aid to help the wife to rehabilitate herself instead of the long term duty of the ex-husband. Partly as a response to the much less generous financial support from the ex-husbands and the increase in occurrences of divorce associated with the no-fault divorce reform, women invest more heavily in market specific human capital and increase their attachment to the labor market as an insurance against the financial distress they foresee to encounter should their marriage fail (Johnson & Skinner 1986; Parkman 1992). This has weakened household gender specialization as the incentive for couples to co-ordinate their investment in market and marriage specific human capital and time allocation is reduced and can result in inefficiency in allocation of household resources.

In the wake of these changes that are commonly believed to have impaired the traditional marriage institution, policy makers have brought about reforms in other aspects of the traditional family law. For instance, the National Conference of Commissioners on Uniform State Law (NCCUSL) formulated the Uniform Marriage and Divorce Act (UMDA) in 1970 intended to serve as a model for state divorce laws and was a comprehensive effort to codify the family law. This includes recognizing the homemaking contribution in child care alimony award and property division (see Baer 2002). Many states began to recognize homemaking contribution in their statutes or by established case law in the disposition of property at divorce. Jacob (1988) points out that more than twenty states have introduced the homemaking provision in property distribution by 1983 while none had it in their statutes in 1968.

The aspect of the change in divorce law of particular interest in this paper is this homemaking provision for property division at divorce. To be precise, the homemaking provision under study refers to that some states have enacted statutes or have established case law that recognize the contributions of the spouses as a homemaker in division of marital assets at divorce.[2]Although ultimately the judge has the discretion to interpret the provision and

[2]The actual statute can vary slightly across states. The following are the relevant portions of the property division statutes from Arkansas and Montana to illustrate the homemaking provision in the statutes:

to decide how much additional property to be assigned to the homemakers at divorce out of such provision, the homemakers are of no doubt better protected by the provision as the rights of the homemakers to the marital property become more clearly delineated than without it. One important question to be addressed in this paper is whether and to what extent this homemaking provision serves as an intertemporal commitment device concerning future compensation for homemakers' non-market contribution? Also, are there any unintended consequences associated with the adoption of such commitment device?

The homemaking provision in divorce law has been quite extensively discussed in the law literature in the past decades (see for instance, Fineman 1989; Brown & Viken 1990; Starnes 1993). Quite surprisingly, its social and economic impacts have rarely been studied by economists and sociologists. Stevenson (2008) hints at the potential economic impact of the homemaking provision in divorce law but to the best of my knowledge none had attempted to provide a comprehensive empirical investigation on the subject matter. Much is to be gained from an investigation of how and to what extent this provision influences household behavior. The unilateral divorce revolution has been blamed for making marriage more fragile (see Boyd 2006). The findings in this paper are of considerable interest to policy makers who are concerned with marital stability and promoting marriage.

This paper contributes to the literature on the change in divorce law on household behavior. The existing literature primarily focuses on the discussion on the impact of unilateral divorce on divorce rates (see Peters 1986; Allen 1993; Friedberg 1998; Wolfers 2006) and how the unilateral reform and changes in the rules governing property division at divorce affects family outcomes such as spousal labor supply, investment in marriage specific capital and home ownership. Stevenson (2007) finds that the adoption of unilateral divorce lowers

Arkansas (A) At the time a divorce decree is entered: (1) All marital property shall be distributed one-half (1/2) to each party unless the court finds such a division to be inequitable, in which event the court shall make some other division that the court deems equitable taking into consideration (1) the length of the marriage; (2) age. health, and station in life of the parties; (3) occupation of the parties; (4) amount and sources of income;(5) vocational skills; (6) employability; (7) estate, liabilities, and needs of each party and opportunity of each for further acquisition of capital assets and income;(8) contribution of each party in acquisition, preservation, or appreciation of marital property, including services as a homemaker, and (9) the federal income tax consequences of the Court's division of property. When property is divided pursuant to the foregoing considerations the court must state its basis and reasons for not dividing the marital property equally between the parties and such basis and reasons should be recited in the order entered in said matter. Ark. Stat. Ann. § 34-1214(A)(1) (Cum. Supp. 1985) Montana In making apportionment, the court shall consider the duration of the marriage and prior marriage of either party; the age, health, station, occupation, amount and sources of income, vocational skills employability, estate liabilities, and needs of each of the parties; custodial provisions; whether the apportionment is in lieu of or in addition to maintenance; and the opportunity of each for future acquisition of capital assets and income. The court shall also consider the contribution or dissipation of value of the respective estates and the contribution of a spouse as a homemaker or to the family unit. Mont. Code Ann. § 40-4-202(1) (1987)

marriage specific investment (see also Gray 1998; Stevenson 2008). This paper examines how the terms in ex-post divorce property division that recognize home production affects investment in household public goods, time allocation within marriages as well as marital formation and dissolution. It is unique in the sense that this provision directly targets at the homemakers, which have widely been conceived as the victims of the unilateral divorce reform. Even though such assessment is important in evaluating the effectiveness and impact of policies that serve to protect homeworkers, it has nevertheless been largely absent in the literature.

In addition, recent literature on families in the United States suggests that highly educated women are opting out of the labor force for their families (see for instance, Shang & Weinberg 2013; Hersch 2013). This trend has garnered a great deal of media attention in the 2000s. According to U.S. Census, in 2011, there are 5 million stay-at-home mothers with children under 15 in the United States. The homemaking provision for property division at divorce is one of the policy choices that can have an impact on the labor supply of these 5 million homemakers. This is especially true among the highly educated women who are more likely to have husbands that are equally or more educated. These households typically have more marital assets to split at divorce. This study provides insights on the effect of this homemaking provision on the labor supply of women. Conjecturally the homemaking provision can play a role in the opt-out decision of married women.

I make use of the time variation of the adoption of the provision across states to identify the causal effects of the homemaking law on spousal behavior. The empirical analysis makes use of variety sources of data. I compile data on the timing of the introduction of the homemaking provision across states based on the state statutes and established case law. I use 30 waves of the Panel Study of Income Dynamics (PSID) from 1968-1997 and construct a state-level panel that spans from 1972-2009 to perform the individual fixed-effect and state fixed effect regression analyses.

My findings show that for households that reside in unilateral divorce states, this law has encouraged more home production and reduced labor supply on the side of the wives especially for couples that married prior to the reform based on the results of the individual fixed effect model. For husbands, their leisure increases which suggests that they might be discouraged from contributing to the family with the law. These stand in contrast to Parkman (1992), which finds no evidence that the lack of compensation for marriage-specific investment (such as being a good homemaker) at divorce gives rise to an increase in wife's

labor supply. One major problem lies in his treatment for states under the equitable distribution property regime as though they all give recognition to the homemaking contribution of wives but not the reduction in a spouse's future earnings. Such treatment raises concern as the factors to consider for equitable distribution varies from states to states within these equitable distribution regimes.[3] It is therefore important to focus on the homemaking statutes or established case law that recognize homemaking contribution in states instead of presuming equitable distribution to mean that the states under this regime must necessarily have taken into account of homemakers' contribution to the family in property division at divorce. The empirical results in this paper suggest that compensating wives' marriage-specific investment at divorce produces negative effect on their labor supply during marriage.

In line with Chiappori et al. (2005), the empirical evidence indicates that the impact of the provision on household behavior is at least partially mitigated over time as shown by the overall stronger responses of couples married prior to the introduction of the homemaking provision. I also find that the provision creates a considerable long term impact on marriage. Both marriage and divorce increase over time and the net impact on marriage is positive. On the net it increases the marriage rate by at least 5.9 percent in states that have implemented the provision for over 26 years. The increase in divorce rate over time with the provision might be attributable to the presence of significant selection effect: more bad marriages might have occurred. There is also some evidence that the provision stimulates birth rates and home investment. Overall the results suggest that the homemaking provision enhances wives' home production, households' home investment and possibly childbearing.

The theoretical framework in this paper is related to the literature on property rights (Alchian and Demsetz; Williamson 1979; Barzel 1989). With the prospects of future divorce, the delineation of ex-post divorce property rights of marital assets plays an important role with regard to shaping spousal behavior within marriage, although understandably such rights in reality are never perfectly delineated. The inefficiency problem in this model comes from the opportunistic behavior arising from the high transaction cost in writing a complete

[3]For instance, Mississippi requires the distribution of property at divorce to be equitable. But in deciding a fair and equitable distribution, the judge does not take the homemaking contribution of spouses into consideration. Kansas is also an equitable distribution state, but in dividing assets, the court does not explicitly consider homemakers' contribution but actually give recognition to spouses' present and future earning capacities. Kan. Stat. Ann. 60§-1610(b)(1) (2009): "Financial matters. (1) Division of property..... In making the division of property the court shall consider the age of the parties; the duration of the marriage; the property owned by the parties; their present and future earning capacities; the time, source and manner of acquisition of property; family ties and obligations; the allowance of maintenance or lack thereof; dissipation of assets; the tax consequences of the property division upon the respective economic circumstances of the parties; and such other factors as the court considers necessary to make a just and reasonable division of property."

marital contract that rewards spouses based on their contribution to the marriage both financially and non-financially. When property rights of the marital assets are solely based on who financially earns the assets, as in the case in the traditional common law regime that allocates the assets according to titles; the homemakers are put at a very vulnerable position at divorce for they have contributed to the "joint family enterprise", but are not entitled to the property rights of the accumulated assets to which they have contributed non-financially. The situation is made worse under unilateral divorce whereby one can leave the marriage without the consent of the other spouse.[4] The problem arises because the wage earner cannot credibly promise to compensate the homemaker for her marriage-specific public goods provision (see Lundberg 2008). The willingness for couples to marry also falls as the value of marriage declines.Theoretically couples could write privately negotiated contracts to ensure efficient home production but in reality such contracts are usually prohibitively costly to enforce.[5] It is practicably implausible for couples to specify all the contingencies and appropriate level of damage payments associated with the circumstances of the parties at the time of marriage in a marital contract in a world of imperfect knowledge. Couples are also subject to legal limit in making premarital contracts. For instance, courts might not enforce prenuptial contracts that encourage divorce. But it is unclear what terms in the prenuptial contracts are considered as "promoting divorce" by court (Oldham 1984; Cohen 2002).

Based on the above reasoning, the unilateral divorce law might make couples more likely to behave non-cooperatively in making decision that would affect their payoff in divorce state. I develop a simple model of marriage in which spouses choose their public goods investment decisions non-cooperatively to capture the effect of the homemaking law. The key implications from my model is that when the homemaking provision is gender non-neutral (i.e. favoring the wife which holds true empirically), it will produce positive effect on the amount of housework performed by wives and reduce their labor supply when couples make time allocation and public goods investment decision non-cooperatively. This paper attempts to investigate whether the unilateral divorce reform has impaired co-ordination within households, which in turn transformed the functioning of contemporary marriages. This aspect of the effect of the unilateral divorce has been overlooked in the literature and might enrich

[4]Although technically unilateral divorce is different from no-fault divorce, the economics literature typically takes the term unilateral divorce and no-fault divorce interchangeably. This interchangeable use is based on the belief that mutual consent divorce is typically fault-based whereby the harmed party must be compensated fully for divorce to occur whereas unilateral divorce must be on no-fault ground since any spouse who are not satisfied with his/her marriage is permitted to file divorce. This has actually overlooked the fact that mutual consent divorce per se does not require faults to occur as long as both parties agree to terminate the marriage.

[5]Heather(2003) points out that one study suggests that only 1.5% of marriage license applicants would consider entering into prenuptial agreements.

our understanding in the evolution of marriage over the past decades.

The rest of the paper is organized as follows. Section 2 discusses the theoretical framework and how it is linked with the actual homemaking provision law. Section 3 provides the empirical specification. Section 4 discusses the data and presents the summary statistics. Section 5 performs the exogeneity tests of the quasi-natural experiment of the homemaking law. Section 6 presents and analyzes the results. Section 7 concludes.

2. Theoretical Framework

Traditionally members within families have been assumed to behave co-operatively in the economics literature. This includes the Becker (1981) unitary model which assumes that individual family members pool their income to maximize one 'consensus' family utility function. The bargaining models of marriage (McElroy & Horney 1981; Manser & Brown 1980; Lundberg & Pollak 1993) and collective approach of Chiappori (1988;1992) move one step further to allow for spouses to have different utility functions; yet all these assume the outcomes of the decision process to be always efficient. Aside from the theoretical convenience in imposing Pareto efficiency in household models, the justification for adopting such assumption in marriage is that marriage is usually viewed as a long-lasting relationship between spouses and so they have every incentive to co-ordinate and communicate to achieve an efficient outcome. This argument however is questionable when divorce becomes increasingly common and spouses are unable to make binding agreement related to future behavior and investments that are worth less outside marriage. Couples might behave strategically when for example their time allocation in marriage could affect their future earning opportunities (Lundberg 2008). Even for countries where divorce is rare, intra-household allocation might still not necessarily be Pareto efficient. Udry (1996) shows that allocation of resources within farming households in Burkina Faso does not achieve a Pareto-efficient allocation of resources.

Based on Grossman and Hart (1986) and Hart and Moore (1990) (henceforth GHM), I develop a simple model of marriage in which spouses choose their public goods investment decisions non-cooperatively. In the standard GHM setting, they study the optimal ownership allocation and investment decision under incomplete contracts: when it is costly to list all specific rights over assets in the contract. In situation when there exists some firm-specific investment that is non-verifiable by an outside party, ex-ante investment in firm-specific capital is lower than the first best level as firms renegotiate ex-ante over the surplus produced by such capital ex-post. In my model, the ex-ante non-verifiable investment includes two forms of public goods: One is home assets which have high market value and are non-marital specific. The other form is the performance of domestic duties, which are marital specific

and have lower market value in singlehood.[6]

One reason for the inefficiency in public good provisions in families is the limit in couples' ability in writing complete marital contracts that specify intra-household allocation of family resources contingent on their financial and non-financial contribution to the family. In addition, these contracts are non-binding and unenforceable in court as the state usually does not interfere with the private sphere of individuals unless the marriage actually dissolves. Conceivably married couples are especially less likely to behave co-operatively in their investment and time allocation decisions when divorce is unilateral and transaction cost in negotiation is high.

2.1. **The Model.** The household consists of a wife(f) and a husband (m). Spouse i's utility function is quasi-linear and is given by:

Utility of spouse in marriage:

$$U_i^M = c_i + v_i(G_1) + G_2 \tag{2.1}$$

where G_1 represents home assets which are household public goods that are durable and have resale value. G_2 represents domestic duties that are assumed to be public goods within a household. v_i is concave and twice differentiable.[7]

It is assumed that the contribution of the wife and the husband are substitutes in the production of the public goods. The Production technology of the home assets and domestic public goods are given respectively by:

$$G_1 = g_m + g_f \tag{2.2}$$

$$G_2 = \gamma_m f(l_m) + \gamma_f f(l_f) \tag{2.3}$$

[6]The application of the GHM framework into the study of marriage has been adopted by Rasul (2006a) in optimal custody allocation. In his work spouses decide on investments in child quality during marriage based on the custody allocation that is assumed to be fixed before couples marry. The custody allocation under this setting would produce both distributional and efficiency consequences as it determines the share of marital surplus each spouse appropriates in marriage. Konrad and Lommerud (2003) also study the human capital investment decision of couples in a non-cooperative framework. Spouses first invest in their education non-cooperatively while the day-to-day allocation of time is determined at a later stage through Nash-bargaining with the non-cooperative behavior as the fall-back position.

[7]The main results do not rely on the assumption of linearity in G_2.

where g_i denotes spouse i's investment in home assets; $\gamma_i$stands for the efficiency of spouse i in the production of the domestic public goods. $f(l_i)$ is a concave function.
Spouse i's time constraint:

$$l_i + h_i = 1 \tag{2.4}$$

where l denotes time spent on domestic duties; h denotes market labor . The total amount of time available to each spouse is normalized to 1.
Spouse i's budget constraint:

$$w_i h_i = c_i + p g_i \tag{2.5}$$

where w stands for the market wage; c is private consumption and its unit price has been normalized to 1. p denotes the price for home assets.
Utility of the wife in divorce:

$$U_f^D = c_f + v_f[\alpha(g_m + g_f)] + \theta\gamma_f f(l_f) \tag{2.6}$$

Utility of the husband in divorce:

$$U_m^D = c_m + v_m[(1-\alpha)(g_m + g_f)] + \theta\gamma_m f(l_m) \tag{2.7}$$

(2.6) and (2.7) assume that domestic work is worth less in divorce state which is given by the condition $0 \leq \theta < 1$. One justification as suggested by Lundberg (2008) is that domestic skills are usually marriage-specific and have little value in single life. Also domestic work is not generously remunerated in the market (see England and Folbre 1999). α represents the portion of the home assets that is allocated to the wife at divorce. So under standard community property law and common law, $\alpha = \frac{1}{2}$and$\frac{g_f}{g_f+g_m}$ respectively.

2.2. **Timing of the Non-cooperative Game.** With the possibility of divorce, which is taken as an exogenous event in this model for simplicity, couples behave non-cooperatively. The timing of events is as follows:

In period one, the spouses decide how much time to be allocated to domestic duties and labor work non-cooperatively. The domestic duties are public goods in marriage. Out of the wage income they receive from their market labor supply, they decide how much to spend on their own consumption and invest in home assets which are also public goods in marriage. It is assumed that the cost for spouses to write a marital contract that specifies ex-ante the

marital surplus each party would get based on their amount of contribution to homemaking and the home asset is prohibitively high.

In the second period, divorce occurs exogenously with probabilityβ where$0 \leq \beta \leq 1$. In the state where couples remain married, they renegotiate over the marital surplus. In the divorce state, they keep their own part of public goods generated from time allocated to domestic duties but the home asset will be split. The proportion shared by the wife is given by α.

This setting is particularly applicable to unilateral divorce regimes because divorce can be obtained on demand by either spouse which might impair the cooperative nature of marriage.[8]When transaction cost is high, which is typically the case for marriages that are on the verge of breaking up, the reluctant spouse will not be appropriately compensated. As a consequence, spouses are less likely to co-ordinate in decisions that will affect the payoff at divorce state.

2.3. **The Non-cooperative Game.** Assume that when it is efficient to keep the marriage, spouses split the marital surplus equally, so that the Nash-bargained payoff of the wife after the renegotiation is given by:

$$U_f^M + t^* = c_f + \frac{1}{2}\{v_f(G_1) + v_m(G_1) - v_f(\alpha G_1) \tag{2.8}$$

$$-v_m[(1-\alpha)G_1] + 2G_2 - \theta\gamma_f f(l_f) - \theta\gamma_m f(l_m)\}$$

$$+v_f(\alpha G_1) + \theta\gamma_f f(l_f)$$

where t^* is the transfer from the husband to the wife within marriage.This means utilities are "redistributed" through private consumption to induce public good provision when they make their investment and time allocation non-cooperatively.

To focus on the effect of the homemaking provision on resource allocation, assume that the utility functions for the wife and husband are identical, so the right- hand side of (2.8) simplifies to:

$$U_f^M + t^* = c_f + \frac{1}{2}\{2v(g_m + g_f) + 2[\gamma_m f(l_m) + \gamma_f f(l_f)] \tag{2.9}$$

[8]The first best benchmark case and the source of inefficiency of the model are discussed in Appendix B.

$$-v[\alpha(g_m+g_f)]-v[(1-\alpha)(g_m+g_f)]-\theta\gamma_f f(l_f)-\theta\gamma_m f(l_m)\}$$

$$+v(\alpha G_1)+\theta\gamma_f f(l_f)$$

And if divorce occurs, the wife gets:

$$U_f^D = c_f + v_f(\alpha(G_1)) + \theta\gamma_f f(l_f) \tag{2.10}$$

Therefore the total expected payoff for the wife is given by:

$$c_f+(1-\beta)\{v(g_m+g_f)+\gamma_m f(l_m)+\gamma_f f(l_f)\} \tag{2.11}$$

$$+(1+\beta)\frac{v[\alpha(g_m+g_f)]}{2}+(1+\beta)\frac{[\theta\gamma_f f(l_f)]}{2}$$

$$-(1-\beta)\frac{v[(1-\alpha)(g_m+g_f)]}{2}-(1-\beta)\frac{\theta\gamma_m f(l_m)}{2}$$

Similarly for the husband, the total expected payoff is given by:

$$c_m+(1-\beta)\{v(g_m+g_f)+\gamma_m f(l_m)+\gamma_f f(l_f)\} \tag{2.12}$$

$$+(1+\beta)\frac{v[(1-\alpha)(g_m+g_f)]}{2}+(1+\beta)\frac{[\theta\gamma_m f(l_m)]}{2}$$

$$-(1-\beta)\frac{v[(\alpha)(g_m+g_f)]}{2}-(1-\beta)\frac{\theta\gamma_f f(l_f)}{2}$$

Eliminating the market labor supply using the time constraint and substituting out private consumption using the budget constraint–the first order condition for the time the wife allocates to housework is given by:

$$(1-\beta)\gamma_f f^{'}(l_f)+\frac{\theta\gamma_f f^{'}(l_f)(1+\beta)}{2}=w_f \tag{2.13}$$

The first term captures the marginal increase in marital surplus arising out of the increased amount of time the wife devotes to housework. The second term is a combined effect of the reduction in marital surplus and increase in the value of the outside option of marriage (i.e.

divorce) when the wife's housework increases.[9]The latter effect must dominate the former and so the seond term must be positive.

2.4. **With the Homemaking Law.** To analyze the impact of the homemaking provision law on family behavior, it is important to recognize that this law is implicitly non-gender neutral. The asymmetric treatment of the husband and wife in this model is justified by that the law serves to protect the ex-post divorce welfare of the homemaking wives. For one thing, housework has been predominantly a female task as a result of the long rooted gender specialization of labor within families. In 2009, 18.5 percent of married fathers with children under age 18 that are employed full time with wives also employed full time would do housework whilst 11.6 percent of these fathers would do housework when their wives are not employed. For married mothers, 78.9 percent would do housework when they are not employed and for those that are employed full time, 44.9 percent would still perform housework (Bureau of Labor Statistics 2012). These married fathers are much more likely to participate in the labor market than their wives. The labor force participation rate for men and women with own children under 18 are 93.3 and 70.5 respectively (Bureau of Labor Statistics 2013). It is possible that the husband can be recognized as the homemaker in families where the traditional roles of the husband and wife are reversed but no doubt that women shoulder the majority of domestic duties in general.

Assume now α is a function of the wife's household $\alpha(l_f)$ with $\alpha^{'}(l_f) > 0$, so the homemaking law is gender non-neutral; the first order condition for the time the wife allocates to housework is given by:

$$(1-\beta)\gamma_f f^{'}(l_f) + \frac{(1+\beta)}{2} v^{'}[\alpha(g_m+g_f)](g_m+g_f)\alpha^{'} \tag{2.14}$$

$$+\frac{(1-\beta)}{2} v^{'}[(1-\alpha)(g_m+g_f)](g_m+g_f)\alpha^{'} + \frac{\theta\gamma_f f^{'}(l_f)(1+\beta)}{2} = w_f$$

Compared to (2.13) there are two additional terms in (2.14) that capture two effects: The introduction of the homemaking law produces additional marital surplus and outside option effects that stem from that the portion of home assets that goes to the wife when the marriage dissolves is a positive function of the wife's homemaking contribution. The second term must be positive: When l_f increases so that α goes up, it produces additional negative

[9]The increase in the wife's housework produces 2 effects on marital surplus. First marital surplus increases due to a larger amount of domestic goods being shared by the spouses. This is captured by the first term in (2.13). Secondly marital surplus drops because the increase in the amount of domestic goods increases the value of the divorce state too, even though this asset is worth less in divorce state. On the net, the change in marital surplus when housework increases is positive as $0 < \theta < 1$.

marital surplus effect and positive outside option effect on wives. The net positive effect is similar to the combined effect of the reduction in marital surplus and increase in the value of the wife's outside option of marriage given by the second term of (2.13), but in here it comes from the increase inα as driven by the increase inl_f with the homemaking provision. In contrast, the third term is the wife's marginal benefit of increasing l_f arising from the reduction in the portion of home assets claimed by the husband. It must be non-negative as $0 \leq \beta \leq 1$.

Since the homemaking law is assumed to be positively related to the home production by the wife alone, the first order condition of the time the husband allocates to housework is independent of the law and is given by:

$$(1-\beta)\gamma_m f^{'}(l_m) + \frac{\theta\gamma_m f^{'}(l_m)(1+\beta)}{2} = w_m \tag{2.15}$$

The first order condition for the wife's home asset investment is given by:

$$(1-\beta)v^{'}(g_m+g_f) + (1+\beta)\frac{\alpha}{2}v^{'}[\alpha(g_m+g_f)] \tag{2.16}$$

$$-(1-\beta)\frac{(1-\alpha)}{2}v^{'}[(1-\alpha)(g_m+g_f)] = p$$

The effect of the law on wives' investment in home asset is ambiguous. From (2.14), we know that the homemaking law causes l_f to go up, and so α also increases.The effect of the increase in α depends on the concavity of v. For the second term, when α goes up, $v^{'}[\alpha(g_m+g_f)]$ will fall; whereas for the third term when $1-\alpha$ falls, $v^{'}[(1-\alpha)(g_m+g_f)]$ will increase for fixed g. However, if v is not very concave so that the marginal utility of home assets drops only slightly when g increases, the wife will be more likely to increase her home asset investment and the opposite is true for the husbands since the problem i symmetric.

2.5. **Discussion.** Note that the above results differ from those derived from a co-operative setting in a number of aspects. First under a co-operative setting, the decision process of households always produces Pareto efficient outcomes. I show in Appendix B that when spouses make decision non-cooperatively, the amount of housework performed is always below the efficient level without the homemaking provision. The non-cooperative setting better captures the phenomenon to be addressed in this paper: specialization of labor within households has been weakened due to that wives allocate less time to the provision of marriage-specific public goods in anticipation of the possibility of divorce and this has widely been

conceived as socially sub-optimal or having impaired the traditional marriage institution.

Secondly the effect of the homemaking law on the amount of housework performed by the wives is ambiguous under a co-coperative divorce-threat bargaining model. Conceptually the law would bring about two opposite effects on wives' supply of housework. With the homemaking law, the threat point of the wife will be higher when she supplies more housework. This tends to increase the amount of housework she performs. However the higher threat point will produce a positive income effect on the wife and if leisure is a normal good, she will increase her leisure and this will lower the amount of work she performs, both in the market and at home. The overall effect of the law depends on the relative magnitude of these two opposite effects. In contrast, under a non-cooperative framework as shown in the above, the wife must increase her supply of housework with the homemaking law.

One question is empirically how can we distinguish the two models? After all if the empirical results suggest that the law does increase the amount of housework performed by wives, neither theory will be rejected. Indeed we cannot distinguish the two if we merely investigate the impact of the law on the time allocation of spouses alone. However as suggested above, the unilateral divorce reform allows any spouse to exit the marriage without the other spouse's consent. This is likely to make couples behave less co-operatively in terms of investment and time allocation that will affect their divorce payoff. Therefore conjecturally we will observe differences in the responsiveness to the homemaking law under two different divorce law regimes. Hypothetically the effect of the law on wives in states operating under the unilateral divorce regime will be stronger compared to their counterparts residing in states under the mutual consent divorce regime if the unilateral divorce does make married couples less co-operative. Alternatively, if the law has no impact on the decision making process of couples, we will see no statistical difference in the responsiveness to the homemaking law in the two regimes.

A natural extension of this model is to endogenize divorce by introducing a random quality match so that the investment in household public goods would produce an additional effect that lowers the probability of divorce. This would conjecturally make the investment and time allocation decision of the husband to be dependent on the homemaking law as divorce is endogenized and depends of the amount of public good provision. The assumption that the two kinds of public goods home assets and domestic duties are additively separable in the utility function of spouses can also be relaxed to investigate how, for instance, complementarity in their consumption would alter the implications of the model.

The next section aims to examine empirically whether the homemaking law produces positive effect on home production and to what extent it affects household behavior such as the amount of housework performed, childbearing, home ownership, labor supply and leisure. Leisure or nonworking hours are used as a proxy for private consumption. Another interesting area for empirical examination is to investigate how this homemaking law affects the occurrences of marriage and divorce. Although in my framework I have not explicitly modeled the decision to marry with the homemaking provision and the probability of divorce has been taken as exogenous; based on the above results conjecturally if the law indeed increases the amount of housework performed by wife and the potential negative effect on total amount of investment by spouses in home asset is not of large magnitude, the law will enhance marital surplus and thus encourage couples to get married. The effect on the occurrences of divorce is less clear-cut. On the one hand based on the above argument if marital surplus increases, holding other things constant; couples will be less likely to divorce. On the other hand, the law might lower the quality of match in the marriage market and some couples who would not have become married without the homemaking law might get married as a result of the increase in marital surplus due to a higher degree of household specialization of labor induced by the law. This will change the composition of the pool of couples that get married and is expected to increase the occurrences of divorce.

3. Empirical Specification

By using the time variation of the adoption of the provision across states to identify the causal effects of the homemaking law on spousal behavior, the following individual fixed effect model is used to estimate the impact of the homemaking provision on time allocation and home investment of spouses:

$$
\begin{aligned}
(3.1) \qquad Q_{i,s,t} = & \sum_{j=1(5)}^{11+} \beta_j pro_{for(j)to(j+4)years_{s,t}} + \sum_{k=1(5)}^{16+} \theta_k uni_{for(k)to(k+4)years_{s,t}} \\
& + \sum_{l=1(5)}^{11+} \phi_l pro_{for(l)to(l+4)years_{s,t}} * unilateral + \rho eqdist_{s,t} \\
& + f_i + \alpha_t + \gamma_s + \mathbf{d}^{'}\mathbf{x_{i,s,t}} + \epsilon_{i.s.t}
\end{aligned}
$$

where Q is the outcome variables under investigation including hours of housework and market work performed by the spouses, their labor force participation, leisure (nonworking hours), the natural logarithm of the home value in 1982 dollars and home ownership dummy; *pro* represents dummies for states that have introduced the provision for j to j+4 years where j starts from 1 and then 6 and so on; similarly *uni* stands for states having implemented

unilateral divorce for k to k+4 years; *unilateral* is a dummy variable that takes one if the state has a unilateral divorce regime at time t and zero otherwise; *eqdist* denotes dummies for states with equitable property division respectively; f,α and γ represent the individual, year and state fixed effect respectively and the vector $\mathbf{x}$ stands for demographic controls;[10] i, s and t denote the individual, state and year subscripts.

Based on the results derived from the theoretical model and the discussion in section 2, if couples behave non-cooperatively regardless of whether divorce is mutual consent based or unilateral, β_j is positive on the amount of housework performed by the wife and negative on her market labor. However if the reason behind non-cooperation comes from the unilateral divorce law, the sign of β_j is ambiguous. ϕ_l captures that effect of the homemaking provision interacting with the unilateral divorce regime dummy. If the unilateral divorce law leads couples to behave less co-operatively, it will be positive on home production of the wife and negative on labor supply of the wife. The law should produce no effect on husband's home production if it is indeed gender non-neutral and if couples makes their time allocation non-cooperatively as it does not enter into the homemaking decision process of husbands. However his labor supply might fall and leisure might increase due to the the enhanced share of the home assets of wife at divorce through the increase in the amount of housework she performs, which produces disincentive effects. In this case, ϕ_l is negative for husbands' labor supply and positive for his leisure. I have not explicitly modeled leisure but it is easy to imagine that if leisure is one of the choice variables in the model, he will increase his leisure (which is similar to his private consumption) and lower his labor supply due to the exacerbated free-riding problem for home asset provision from the perspective of the husband.

I also perform the following state fixed effect regression model to estimate the impact of the homemaking provision on marital formation and dissolution as well as fertility using a self-compiled state level panel data:

$$Y_{s,t} = \sum_{j=1(5)}^{26+} \beta_j pro_{for(j)to(j+4)years_{s,t}} + \sum_{k=1(5)}^{26+} \theta_k uni_{for(k)to(k+4)years_{s,t}} \tag{3.2}$$

$$+\kappa compro_{s,t} + \rho eqdist_{s,t} + \mathbf{d}'\mathbf{x}_{s,t} + \alpha_t + \gamma_s + \epsilon_{s.t}$$

where $Y_{s.t}$ is the state level outcome variable (i.e. marriage, divorce and birth rates) in state s in year t;*pro* represents dummies for states that have introduced the provision for j to j+4

[10]The benchmark regression model includes age and age squared of wives, dummies for education of the spouses as the demographic controls.

years where j starts from 1 and then 6 and so on; similarly*uni* stands for states having implemented unilateral divorce for k to k+4 years; *compro* is a dummy variable that takes one if the state has a community property regime at time t and zero otherwise; *eqdist* is a dummy variable that takes one if the state has an equitable distribution regime for marital properties at time t and zero otherwise $\mathbf{x_{s,t}}$ is a vector of state level control variables exogenous to the outcome variables such as state level disposable income per capita, and proportion of marriageable population ; α_t and γ_s represent year and state dummies and $\epsilon_{s,t}$ is an iid error term.

If the law does reinforce gender specialization of labor within marriage, marital surplus will go up in general. This will increase the propensity to marry and we will expect that β_j in equation (3.2) to yield a positive sign on marriage rates. An additional consideration is how this law affects the composition of the pool of married individuals. Suppose that this law does enhance marital surplus so that more people get married, there are two potential consequences: First some people who would not have married without the law now get married and these marginal couples are more prone to divorce. In other words, more bad mates now get married. Also as a result of the increase in return from marriage, individuals might select less carefully for mates in the marriage market and these bad matches will produce more divorce. It is an important empirical question to assess how this homemaking law affects net marriages as one of its major policy goals is to enhance the marriage institution apart from financially protecting the homemakers.

On top of the over-time impact of the homemaking provision, equation (3.1) and (3.2) control for states with unilateral divorce or equitable distribution as these laws might have impact on household behavior (Stevenson 2007) and might confound the results without properly controlling for these regimes if these variables are correlated with the introduction of the homemaking law.[11]

4. The Data

I obtained the information on the timing of implementation of the homemaking provisions from a variety of sources. In some states it is found in their statutes. A number of articles in the law literature such as Batts (1988) also provide information on the timing of implementation of the homemaking law for a number of states. I also traced out established

[11]Initially, ex-post divorce property rights in common law regimes are titled based. Some common law states switch their law regarding property division at divorce to equitable which gives judges the discretion to distribute marital properties according to what the judge deems as fair and equitable. On top of these legal regime controls, equation 25 also controls for states that are under the community property regime. It is excluded from the individual fixed effect model because Wisconsin is the only state that experienced a switch from the common law regime to the community property regime.

case law and statutes related to the homemaking law from internet search engines for legal cases and codes such as www.findlaw.com and the case law finder provided by LexisNexis.

The primary empirical analysis makes use of data from the Panel Study of Income Dynamics (PSID) and a self-compiled state-level panel data. I use 30 waves of the PSID from 1968 to 1997. And data collected from 1% sample of U.S. Census Data (Integrated Public Use Microdata Series) in 1970 to perform the exogeneity test in Section 5.

The PSID contains detailed information on marital events and status, housework time, labor force participation, income source and housing.[12] It also records the state of residence of the sample households, which is crucial to this study. Another very desirable feature of the PSID to this study is its long panel dimension which allows us to trace out the behavior of households in the course of marriage. It also makes investigating how individuals respond to the introduction of the homemaking provision over time possible by controlling for unobserved individual heterogeneity.

The PSID survey is no longer conducted on an annual basis after 1997. My analysis is based on data up to the 1997 wave. Married women (the spouse of the household head as reported in each survey year) aged between 18 and 55 and their husbands are included in the sample. I have confined my analysis to individuals that are original sample members in the PSID to avoid potential endogeneity problems arising from non-random marital matching.

Examining couples that married prior to the introduction of the provision could isolate the selection and sorting issues that might arise out of the reform. I also perform the same analysis for the full sample. Comparing these results permits the analysis of the potential change in marital investment and sorting in response to the new provision although it is not the objective of this paper to provide a detailed investigation into the channels through which such changes occur. Such work will be left to future research.

To give an idea of the value of property settlements, consider the first three columns of Table 3, which are reproduced from Rowe and Morrow (1998). It presents the categories and values assets to be divided of final divorce decrees granted between June 1983 and 1984 in Oregon for couples' marriage over 10 years. I compare the figure of housing with the PSID

[12]The exact questions appear in the questionnaire are: "About how much time does your (Wife/"WIFE") spend on housework in an average week? I mean time spent cooking, cleaning, and doing other work around the house." "About how much time do you (HEAD) spend on housework in an average week? (I mean time spent cooking, cleaning, and doing other work around the houses.)" The answers have been converted into annual hours.

sample for couples that own houses in 1984. For home value alone, the average value amounts to $156,278 in 2011 dollars in the PSID sample and it does not differ significantly from the figure in Oregon. Indeed the average value of assets to be divided for propertied couples is not immaterial and therefore it is highly possible that the homemaking provision that alters the property rights of these assets at divorce will change behavior within marriages.

For the state panel data, the number of yearly occurrence of marriages and divorces in states is collected from the Vital Statistics of the United States. One advantage of the data collected from the Vital Statistics of the United States is that it is based on marriage and divorce certificates issued in states and thus form very accurate measures for the actual number of marriages and divorces occurring each year in different states. Compared to the marriage rates estimated from data sets such as Current Population Survey (CPS) and American Community Survey (ACS), these surveys are conducted based on random sampling of households. The marriage and divorce rates calculated by these data are based on the actual number of people that declared themselves as married or divorced. The year of marriage and divorce are mostly unavailable in these data which makes it impossible to compute the flow of marriages and divorces each year by using these data. The change in marriage rate based on these measures can be driven by changes in divorce pattern of the stock of married people. This makes these measures undesirable for interpreting how the law affects individuals' marriage and divorce decisions. It might be misleading for instance to infer a higher marriage rate defined this way in one state when the homemaking provision has been introduced to be a result of it based on this measure as some of the individuals in the married and divorced group might well be married or divorced prior to the introduction of the law.

For the measure on birth, I collect the data recorded in Volume I (Natality), Vital Statistics of the United States from 1972-2009. The data includes all births occurring in a given calendar year within the United States and are based on information abstracted form birth certificates filed in vital statistics offices of each State and District of Columbia.

The statistics on state population comes from the Reading Survey of Epidemiology and End Results (SEER) U.S. County Population Data. It provides information on the population in the United States at the level of the state or county by age groups, sex and race from 1969-2009. The state level data on the composition of congress by political party affiliation comes from the Statistical Abstract of the United States.

The state level data on disposable personal income per capita is supplied by the Bureau of Economic Analysis. The statewide unemployment rate since 1976 and onwards and CPI used to deflate the home value in the Panel Study on Income Dynamics (PSID) data and income are provided by the Bureau of Labor Statistics.

By combing the above data, I construct a state level panel data set that contains accurate measures of actual occurrences of marriage, divorce and birth relative to the state population size of a variety of age groups as well as a variety of statewide demographic controls over a 40-year time span that is used to identify to causal impact of the law on marital behavior. Similar to Halla (2009) I have excluded Nevada from my state fixed effect regression analysis due to that the marriage market in this state is very different compared to other states.[13]

Tables 1 and 2 provide the summary statistics for the two data sets used in this study. In particular, Table 1 compares the summary statistics of the full sample with the subsample comprising of couples married prior to the implementation of the homemaking provision in PSID. The latter is used in the main discussion. The statistics shows that couples that married prior to the homemaking law tend to be slightly older and they are characterized by a higher degree of gender specialization. They are slightly less educated and are more likely to have children and own a home compared to the full sample. However the average home value of these couples is lower. This partially reflects that the traditional gender role of the family is less applicable to the younger cohort, which has been widely observed in the literature.

5. Exogeneity of the law

Following Voena (2012), I exploit the exogeneity of this quasi-natural experiment with respect to the state level household and economic characteristics. It might render the experiment invalid if the introduction of the law is found to be correlated with these state characteristics. Since the homemaking provision in divorce law across states follows the recommendation by the UMDA in 1974, I first examine whether there is any correlation between the timing of the adoption of the homemaking provision and the state level household and economic characteristics in 1970. The variables are constructed using the data from PSID and 1% sample of 1970 U.S. Census (Integrated Public Use Microdata Series). The samples are limited to individuals aged 18-50 as this group of marriageable people are the most likely to exhibit impact on the implementation of the law. Figures 2-5 show that there

[13] According to Halla(2009), the average marriage rate of Nevada is about 12 times higher than the average of all other states and its divorce rate is nearly the triple of other states.

is no observable correlation between the timing of enactment and these state variables.

Figures 6-8 and Table 4 provide a further exogeneity test of the quasi-natural experiment. In Table 4, I add a dummy variable that takes 1 for states that will implement the homemaking provision within 5 years to equation (3.1). Figures 6-8 plot the estimated coefficients of a group of leading dummy variables and dummies for states having implemented the homemaking provision for 1-5 years added to equation (3.2). The estimated coefficients should not be statistically discernible from zero if the casual effect indeed runs from the provision to the outcome variables. It is comforting to find that the estimated coefficients of these leading variables of the policy do not differ from zero statistically. This provides further support for that the effects of the homemaking provision found are unlikely to be driven by unobserved factors related to the provision.

6. The Results

6.1. **On Time Allocation and Home Investment within Households.**

6.1.1. *The Effects on Couples Married Prior to the Provision.* In the main analysis for the fixed individual effect model, I focus on the sub-sample that consists of spouses that married prior to the implementation of the homemaking provision. This allows us to focus on the effects of the law on spouses that have been shocked by the policy and isolate the potential selection effect induced by the law. I also present the results using the whole sample data in Tables 10-14. A comparison between these results is helpful in understanding the selection effect at play. Tables 5-9 display the main results on a variety of outcome variables for couples married prior to the introduction of homemaking provision in the states where they reside.

Overall, the results from the individual fixed effect regressions confirm my hypotheses. The results of specification (1) in Tables 5 and 6 show that the provision evaluated alone produce no statistical significant effect on the time allocation and labor supply of wives when the interaction terms of the homemaking provision and the unilateral divorce regime dummy are not controlled for. However once the interaction terms with the unilateral law are introduced in specification (2), it yields the expected results. Wives are found to increase the amount of housework they performed by more than 150 hours annually at least within the first 10 years when the homemaking provision has been introduced. This effect is a 10 percent of the sample mean for wives married prior to the reform. It suggests that unilateral divorce might cause married couples to behave more non-cooperatively in terms of their home production decision. In regard to their labor supply, Table 6 shows that on the

extensive margin, in states with unilateral divorce enforced, the law substantially reduces wives' incentives to participate in the labor market. The effect magnifies over time and exceeds 19 percent for unilateral divorce states that have implemented the homemaking law for over 10 years. On the intensive margin, the law also exhibits very profound impact on the annual hours of market work of wives. In the long term, the law reduces the annual work hours of wives by more than 300 hours states under a unilateral divorce regime. This is a substantial 32 percent of the sample mean. It is somewhat puzzling that the labor supply for wives residing in mutual consent divorce regimes with the homemaking law has actually gone up. This seems to suggest that the decision making process regarding the labor supply decision for wives in the two different divorce law regimes is quite different. The leisure of wives increases by more than 120 hours a year for those that reside in states under the unilateral divorce regime and have introduced the homemaking law for more than 6 years. This suggests that the law have introduced some shirking effect on wives.

The above results suggest that compensation for marriage-specific investment at divorce reduces wive's market labor supply. This stands in contrast to Parkman (1992) which finds no evidence that the lack of compensation for marriage-specific investment at divorce gives rise to an increase in wife's labor supply. In his paper, he found the interaction term of strict property regime (i.e. states that allocate marital properties at divorce by titles only) and unilateral divorce to have no effect on the labor supply of married women (the omitting group is the equitable regime and community property regime). This suggests that the distinction between equitable property regime and the homemaking provision statute is important in identifying the true effect of law that compensates homemakers' contribution to marriage at divorce, as not all equitable states actually give recognition to the homemaking contribution of wives. Treating the equitable property regime and the homemaking provision as equivalence might confound the effect of the homemaking law.

Tables 7-8 present the estimated effects of the provision on husbands. They are different from the effects on wives. This provides support for my claim that this homemaking provision is implicitly gender non-neutral. In general, the law produces no strong effect on annual hours of housework performed by husbands except for states that have the provision in force for more than 10 years regardless of the divorce regime. This is quite consistent with the the result derived from the non-cooperative model. The homemaking law decreases the amount of husbands' contribution to the household by reducing their labor supply and increasing their leisure in the unilateral divorce states. Table 7 shows that leisure by husbands has also gone up especially those in unilateral divorce states that have implemented the law for the first 10 years based on specification (2). Table 8 suggests that husbands reduce their labor

supply on both intensive and extensive margins under the unilateral divorce regime. On average the husbands residing in states under this regime lower their labor force participation by approximately 5 percent after the provision has been in force for 5 years. The annual work hours are also lower. All these are consistent with that husbands devote less to the family with the homemaking law and when marriage can be terminated without the consent of the other spouse.

Overall the homemaking law increases home ownership and home value but for the unilateral divorce states this effect is weakened. In fact its effect on home value in unilateral divorce states becomes negative when the provision has been in force for more than 6 years. This indicates that the divorce law regime is an important factor in determining the effect of the law on market specific public goods.

6.1.2. *The Effects of the Provision on All Couples.* In this sub-section, I estimate the impact of the provision using the full sample. The goal is to examine whether the behavior of these individuals differ significantly from the restricted sample. According to Chiappori et al. (2005), redistributive divorce laws favoring a spouse would raise his or her intra-marital allocations but for couples marry after the new law, there will be offsetting intra-household transfers that tend to mitigate the effect of the law. Therefore conjecturally the long term impact of the law is weaker when we include couples that marry after the reform as its effect is at least partially undone in the marriage market. These post-reform couples can respond to the legal change by adjusting their pre-marital investment in market and home skills and this might also induce changes in marital sorting in the marriage market. The impact of the homemaking provision can also differ between couples that married prior to the changes in law and the newly-weds.

The results using the full sample are presented in Tables 10-14 and are mostly in line with the above conjecture. Overall the effects of the provision on the variety of household outcomes under study are of weaker magnitude. For instance, although the homemaking law increases the amount of housework performed by wives in the unilateral divorce states compared to the non-unilateral divorce states, the overall impact of the law is actually negative. This suggests that the law might have indeed changed the composition of the married mates. Similar patterns are observed for the labor supply of wives. The law actually increases labor participation of wives but the effect is weaker in unilateral divorce states. For the annual work hours of wives, the negative effect of the law in the unilateral states actually dominate the initial positive effect so that on the net, wives in the full sample reduce their annual hours of work in the unilateral divorce regime with the homemaking provision.

The effect of the homemaking law on husbands in the full sample is also weaker than the pre-reform husbands. The only significant effect produced on them is that the law lowers the annual hour of work for husbands in unilateral divorce states by about 13 hours annually.

The homemaking law produces mixed effect on home asset investment for the full sample. Couples overall are more likely to own homes. The net effect for the value of home assets in unilateral divorce states increase initially but decline after the law has been in effect for more than 6 years.

6.2. **On Marital Formation and Dissolution.** Table 15 reports the impact of the homemaking provision on the state level marriage, divorce and birth rates. The results present a very clear cut pattern that the provision increases the incentives to marry and the magnitude of the effect increases over time and levels off after the law has been implemented for over 21 years. The long term effect is 2.67 per 1000 people aged 15-54, which accounts for 12 percent of the sample mean. Figure 9 depicts the average effect of the homemaking provision on marital formation over time based on the results in Table 8. Loosely speaking, the net effect of the law on marriage creation (or destruction) is given by the difference between the marriage coefficient and the divorce coefficient. Considering that the mean marriage rate for the age group 15-54 is 15.28 per 1000 people and the long term net effect of marital creation is 0.9, the homemaking provision has a large impact on net marital creation. It accounts for a substantial 5.9 percent of the average marriage rate of the United States in the sample period.

6.3. **On Fertility.** Child rearing is one of the major forms of marriage specific investment of which the value declines sharply when marriage dissolves. One aspect of the return of such investment is the companionship, love and pride they give their parents, which is nonrivalrous in nature within a marriage but not so upon its dissolution. Therefore we expect that such investment would drop if the contractual bonds of marriage are weakened and vice versa (Stevenson 2007). If the homemaking provision strengthens the contractual bond of marriage, fertility will go up. Also childrearing requires intensive care typically more of the mothers. The amount of housework performed by the mothers tends to increase with the number of children to be taken care of. Therefore the homemaking law should produce similar effects on birth rates and the time wives allocate to housework. Columns 3 and 4 of Table 15 show that the state level results are roughly consistent with the above hypothesis. Overall the homemaking law tends to encourage fertility and the effect is mostly irrespective of the divorce regime as shown in specification (2).

6.4. **Robustness Checks for the Effects on Marriage, Divorce and Birth Rates.** I conduct several robustness checks for the effects of the homemaking law on marriage, divorce and birth rates. The results are reported in Tables 16-18. Specification (1) is the baseline model. There are some other family law reforms apart from the unilateral divorce reform that might produce impact on marital behavior. If these reforms are correlated with the implementation of the homemaking law, excluding them from the regression might lead to spurious correlation which could produce misleading results. Specification (2) includes a dummy variable for the implementation of the joint custody law. Halla(2009) finds that the introduction of the joint custody law gives rise to a long run increase in marriage rates. Tables 16-18 show that the results are insensitive to its inclusion excepting that the effect for first 5 years of the introduction of the homemaking law on the state marriage rate becomes statistically insignificant.

Specification (3) includes a dummy variable for the introduction of mandatory state income withholding for child support. Conceivably this law would produce effects on marriage, divorce and birth rates. Table 16 shows that the impact of the homemaking law on marriage rates is slightly lowered by the inclusion of the mandatory state income withholding law and its inclusion increases the estimated coefficients for divorce rates excepting for the first 5 years of introduction of the homemaking provision. Birth rates overall are insensitive to its inclusion.

Specification (4) includes the proportion of Democrats in the House of Representatives as political attitude might play a role in the trend of marriage and it is also possible that it at the same time affects when the homemaking law is to be introduced in a state. The results from Tables 16-18 show that the estimated impact of the homemaking law is not significantly affected by the inclusion of this political variable.

Lastly I include state specific linear and quadratic time trends in specification (5) and (6) respectively. The effect of the homemaking law on marriage rates is partially captured by the linear time trend. The quadratic time trend captures less of the effect of the law with time. Overall the effect of the homemaking provision on marriage rates is robust to all the specification excepting the first five years of its introduction. As regards to the divorce and birth rates, most of the effect of the law has been captured by the state-specific time trends. The effect of the law on divorce rates disappears using the state specific linear time trends. However when state specific quadratic time trends are included instead, the homemaking provision is found to produce some positive effect on divorce rates for states that have introduced the law for 16-25 years although the magnitude of the effect is weakened

by about one third. Despite that the effect of the law on state divorce rates is not robust to all the specifications examined, it is still reasonable to interpret from the results that the homemaking provision produces at least some positive effect on state divorce rates. Note that the state-specific quadratic time trends conceivably better capture the state specific time trends of states than the linear ones as the data covers a long 38-year time span. It is not very reasonable to expect the time trend within a state to remain unchanged for almost 40 years. For state birth rates, most of the effect of the law are captured by the state specific-time trends and become statistically insignificant once they are introduced. The evidence for the positive effect of the law on birth rates is therefore inconclusive. Yet the above robustness test suggests that the effect of the law on net marriage rates might be larger than the estimate from the baseline specification. Using specification (6) for example, the average net increase in marriage rate amounts to 13.5 percent of the sample mean instead of 5.9 percent after the time trends have been accounted for.

7. Concluding Remarks

In the past when divorce is a very rare event the joint decision of spouses in the allocation of time and investment in public goods raises no incentive problems as spouses form a union to maximize the joint-marital surplus through specialization of their labor in home and the marketplace. When marital union is expected to be long lasting, couples do not perceive divorce as their "alternative scenario" in their decision making. In such situation, it is reasonable to presume that the decision process of these households to generate Pareto efficient outcomes. Such co-ordination becomes problematic when either spouse can end the marriage without the consent of the other, as in the case under unilateral divorce. I use a non-cooperative bargaining model to analyze spousal time allocation and investment in public goods in a setting that accounts for the possibility of divorce. The setting is particularly relevant to societies like the United States where one-half of all new marriages are expected to end in divorce in the wake of the unilateral divorce reform.

One direct policy implication of the homemaking provision that gives recognition to homemakers' contribution in property division at divorce as suggested by the empirical evidence is that the law indeed serves its intended purpose of enhancing gender specialization in the family and encouraging marriages. However it comes at a cost of reducing the overall spousal contribution to the household. In particular wives that married prior to the introduction of the homemaking provision are found to increase their home production and decrease their labor supply in the unilateral divorce regime where either spouse can exit the marriage without the consent of the other spouse. In contrast, husbands are discouraged from contributing to the family in the unilateral divorce states as they are disfavored by the gender non-neutral

homemaking provision. The existing literature typically assumes the outcomes of decision process within families to be always Pareto efficient (For instance Becker 1981; Chiappori 1988; 1992). This might not be appropriate if we are to study family behavior in the context of frequent marital dissolution. The results indicate that the unilateral divorce reform could have changed the underlying decision making process of existing spouses for outcomes that will affect the ex-post divorce payoff: couples behave less co-operatively when the degree of commitment in marriage is lowered by unilateral divorce. This is a very interesting point that has been overlooked in the literature and is worthy of further investigation.

Admittedly in reality couples typically do not totally disregard each other in their time allocation and public good investment decision despite that a higher likelihood of divorce would hamper their co-ordination. The model I developed in section 2 aims to provide a simplifying framework to analyze the effect of the homemaking law when couples behave non-cooperatively. One major drawback of the model is that it does not highlight the fact that co-ordination can by enhanced by the more intensified household specialization as encouraged by the homemaking law. A more realistic framework might be a hybrid of the co-operative and non-cooperative framework–by allowing for spousal coordination to depend on the probability of divorce. Such setting might better capture spousal behavior in contemporary marriage.

In addition, it is clear from the state fixed effect analysis that the homemaking provision generates profound effect on marital formation. The homemaking provision can be viewed as a contract cost reducing device to encourage individuals to enter into marital contracts and invest in marriage-specific assets that will enhance the gain from marriage as it enhances the non-homemakers' economic commitment to the homemakers. It is also evident from the results that the provision produces changes in the selection of mates in the marriage market and the composition of mates that get married in the marriage market. One important area for further investigation is to analyze the selection effect of mates caused by these legal reforms.

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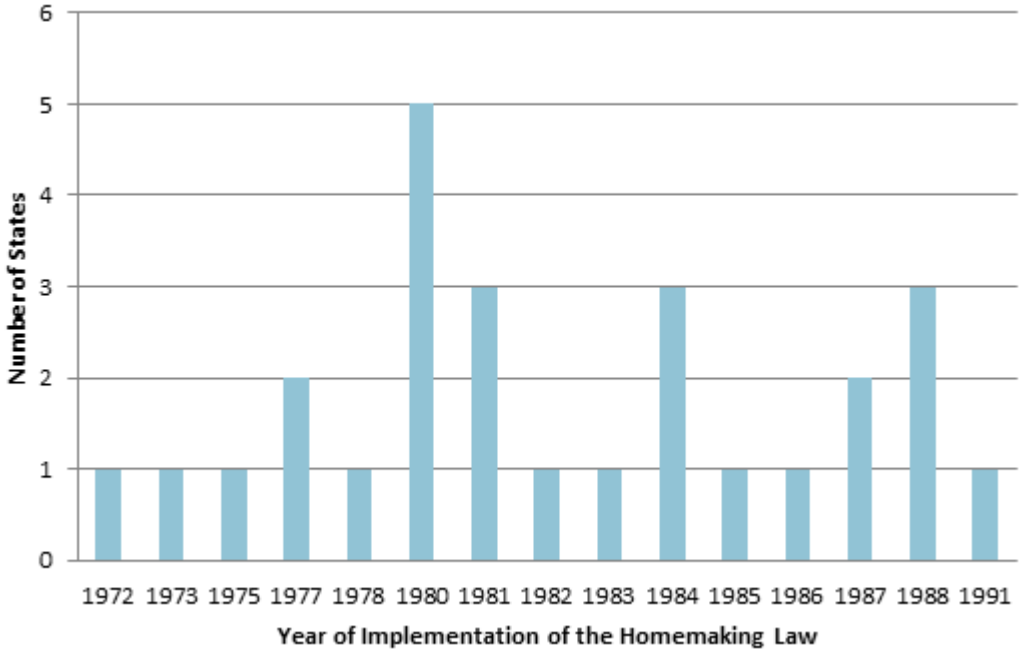
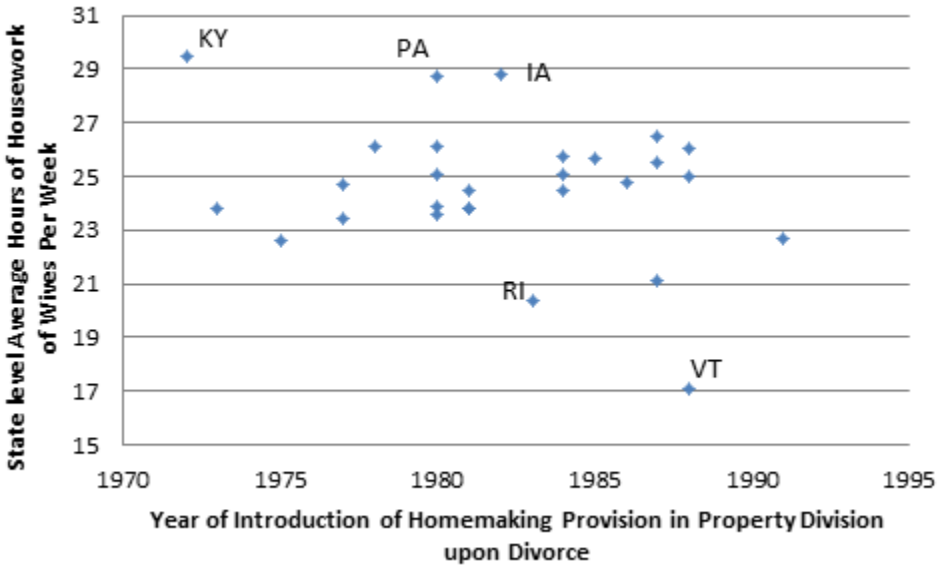
FIGURE 1. Year of Implementation for the Homemaking Provision Law across States



Notes: 27 states introduced the homemaking provision for property division at divorce before 2000. South Carolina actually introduced the law in 2008.

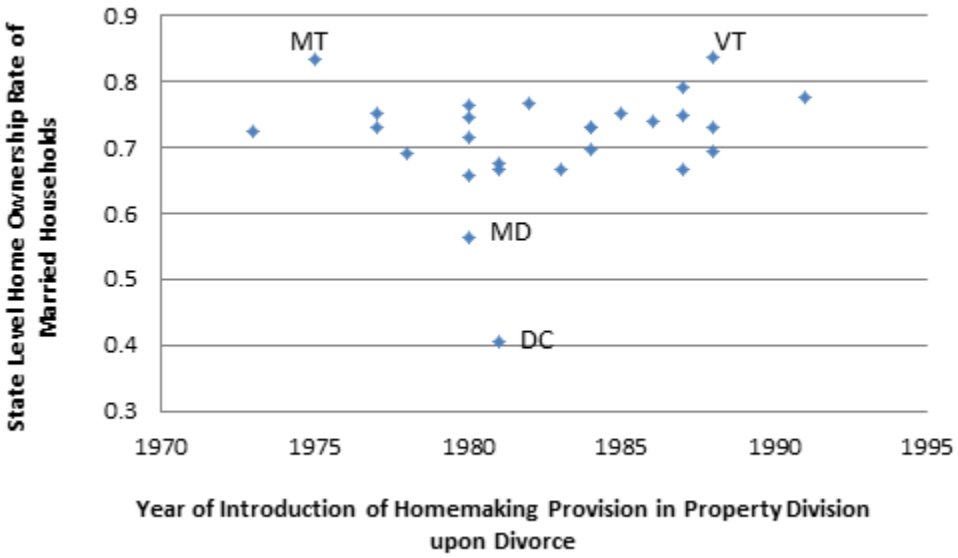
Exogeneity Test 1: Figures 2-5: Timing of the introduction of homemaking provision and state characteristics in 1970

FIGURE 2. State level average hours of housework of wives per week



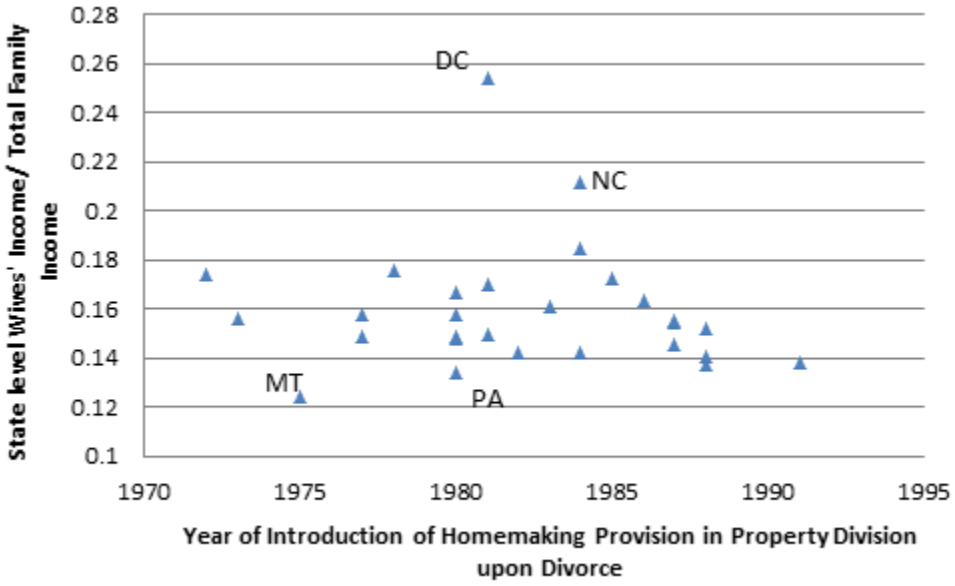
Source: Author's calculation. Data collected from the PSID.

FIGURE 3. State level home ownership rate of married households in 1970



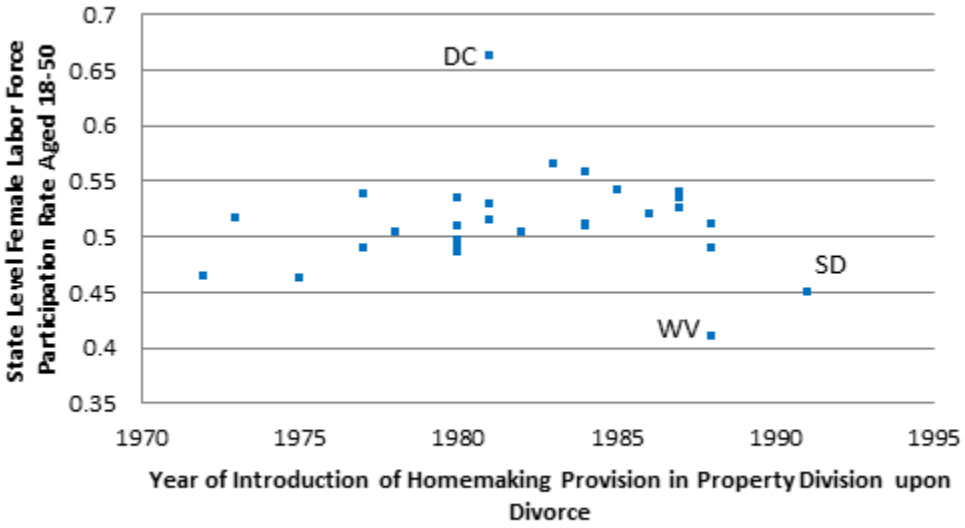
Source: Author's calculation. Data collected from 1% sample of U.S. Census (Integrated Public Use Microdata Series)

FIGURE 4. State level average share of wives' income in total family income in 1970



Source: Author's calculation. Data collected from 1% sample of U.S. Census (Integrated Public Use Microdata Series).

FIGURE 5. State level female labor force participation rate in 1970



Source: Author's calculation. Data collected from 1% sample of U.S. Census (Integrated Public Use Microdata Series).

Exogeneity Test 2: Figures 6-8: Checks for Pre-existing Trends

FIGURE 6. Check for Pre-existing Trends of Marriage Rates of the Homemaking Provision Policy

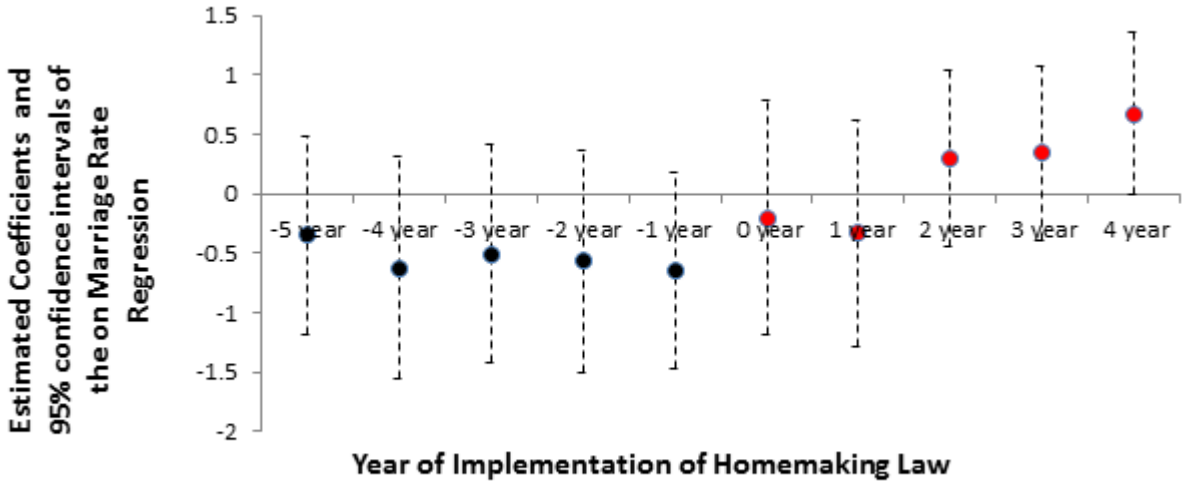


FIGURE 7. Check for Pre-existing Trends of Divorce Rates of the Homemaking Provision Policy

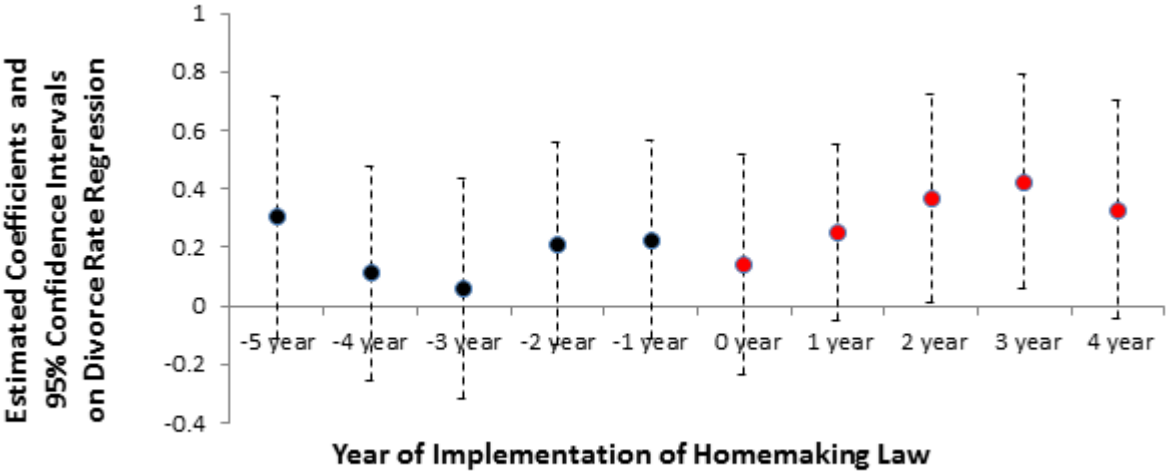
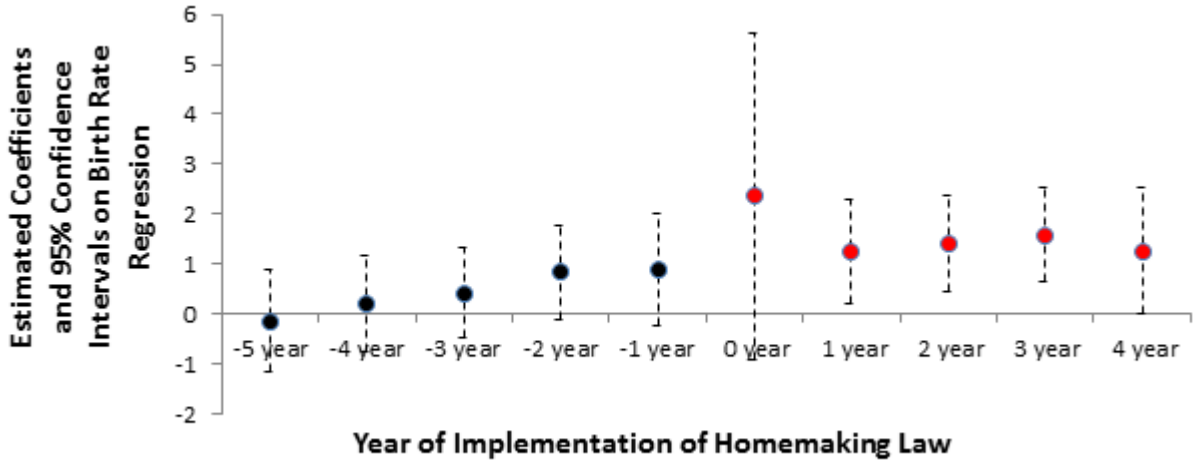


FIGURE 8. Check for Pre-existing Trends of Birth Rates of the Homemaking Provision Policy

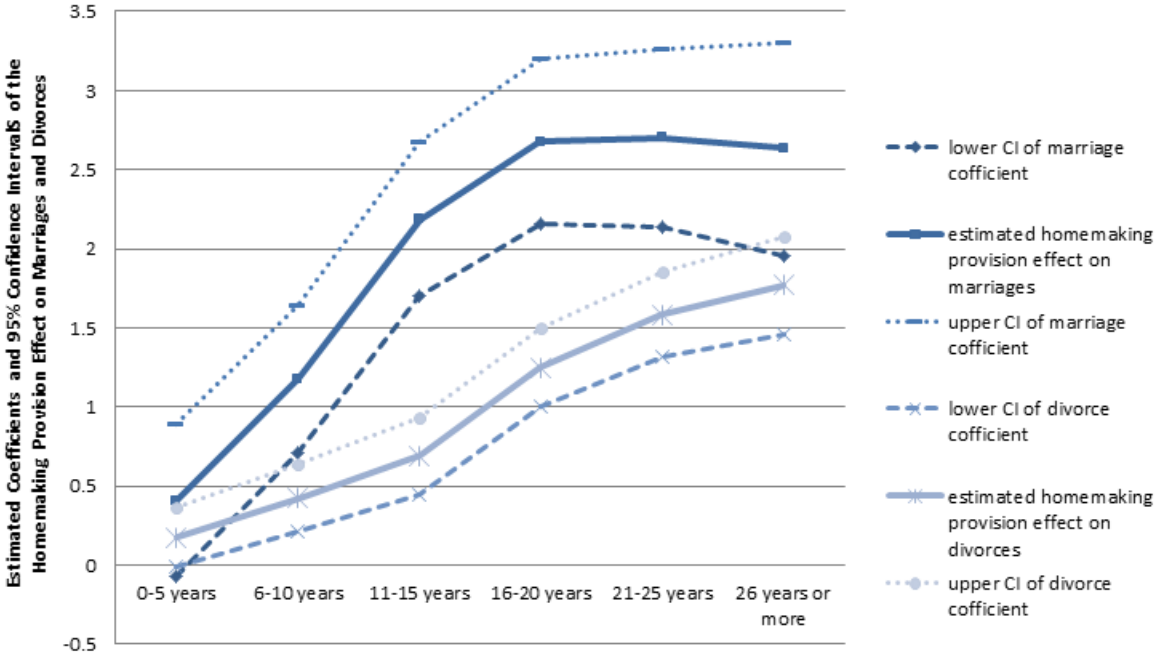


Note: Figures 8-10 display the estimated coefficients and the 95% confidence intervals in dashed bars using specification (1) in Tables 9-11 and adding a group of leading dummy variables of the homemaking provision in order to check if there exists pre-existing trends in the dependent variable prior to the to the implementation of the homemaking provision.
The regression takes the form:

$$Y_{s,t} = \sum_{j=1(5)}^{11+} \beta_j pro_{for(j)to(j+4)years_{s,t}} + \sum_{k=1(5)}^{16+} \theta_k uni_{for(k)to(k+4)years_{s,t}} + \sum_{l=1(5)}^{11+} \phi_l pro_{for(l)to(l+4)years_{s,t}} * unilateral + peqdis$$
$$+ f_i + \alpha_t + \gamma_s + \mathbf{d}' \mathbf{x_{i,s,t}} + \epsilon_{i.s.t}$$

where $Y_{s,t}$is the yearly state level marriage, divorce and birth rate respectively.

FIGURE 9. Estimate of Net Effect of the Introduction of Homemaking Provision on Marital Formation



Note: I used specification (1) to construct this figure.

Table 1: Descriptive Statistics of Data Used in the Individual Fixed Effect Model

Variables	All Sample Data			Married Prior to the Homemaking Provision		
	N[14]	Mean	Standard Error	N	Mean	Standard Error
Age (wives)	43,949	37.75	(9.424)	22,559	38.67	(9.413)
Age (husbands)	43,949	40.48	(10.25)	22,559	41.39	(10.15)
Proportion of households with co-residing children under 17	43,949	0.703	(0.457)	22,559	0.713	(0.453)
Years of education (wives)	43,949	12.66	(2.302)	22,559	12.47	(2.267)
Years of education (husbands)	43,949	12.90	(2.752)	22,559	12.70	(2.788)
Proportion of home ownership	43,949	0.789	(0.408)	22,559	0.808	(0.394)
Annual hours of work (wives)	43,949	983.3	(901.7)	22,559	927.9	(885.0)
Annual hours of work (husbands)	43,949	2,196.6	(766.5)	22,559	2,220.7	(773.8)
Annual hours of housework (wives)	38,840	1,401.1	(878.5)	19,579	1,499.2	(889.9)
Annual hours of housework (husbands)	38,849	301.75	(375.0)	19,579	284.05	(373.7)
Annual hours of leisure (wives)[15]	38,840	6,324.4	(902.6)	19,578	6,285.7	(903.9)
Annual hours of leisure (husbands)	38,849	6,240.4	(796.7)	19,579	6,235.4	(801.5)
Home value in 1982 dollars [16]	32,082	81,784	(215,299)	17,166	76,475	(178,198)

Data: Panel Study of Income Dynamics (1968-1997)

[14]The discrepancy comes from that some values were either missing or misreported in some variables.

[15]I define annual hours of leisure to be the annual non-working hours and is obtained by the annual hours available 8736- annual hours of work-annual housework.

[16]The mean is approximately $114,333 in 2011 dollars and this value is conditional on home ownership.

Table 2: Descriptive Statistics of the Data used in the State Fixed Effect Model[17]

State level variables	N	Mean	Standard Error
Average state number of marriages per 1000 population aged 15-54	1,889	15.28	(4.04)
Average state number of divorces per 1000 population aged 15-54	1,766	7.75	(2.31)
Average state number of births per 1000 population aged 15-44	1,900	33.25	(4.20)
Proportion of population age 15-54	1,900	0.567	(0.02)
Per capita disposable personal income in 1982 dollars	1,900	12,760	(3169.7)
Unemployment rate	1,700	0.062	(0.19)
State level gender balance index [18]	1,900	0.007	(0.005)

Data: Vital Statistics of the United States; the Reading Survey of Epidemiology and End Results (SEER) U.S.County Population Data Bureau of Labor Statistics; Bureau of Economic Analysis

[17] Weighted by state population size.

[18] It is given by the absolute value of the proportion of male in the population aged 15-44 minus 0.5. It is constructed to measure the degree of gender balance of states and to capture the degree of competition in the marriage market.

Table 3: Types and Dollar Values of Assets of Final Divorce Decrees Granted between June 1983and June 1984 in Oregon for Marriages over Ten Years

Asset	% of couples owing	Mean value (1984 dollar)	Mean value (converted to 2011dollar)	Mean value in PSID sample in 1984 (1984 dollar)[19]	Mean value in PSID sample in in 1984 (2011 dollar)
Family home	84.5	71,474.79	160818.3	69,466.9	156,278
Other real property	31.9	127,241.43	286293.2	-	-
Car(s)	99.1	5,578.67	12552.01	-	-
Other vehicles	37.1	5,379.17	12103.13	-	-
Household furnishings	100	8,136.95	18308.14	-	-
Bank account(s)	92.2	5,263.28	11842.38	-	-
Stocks/bonds/investments	31.9	14,422.53	32450.69	-	-
Business /professional practice	29.3	30,109.65	67746.71	-	-
Insurance	41.4	2,320.42	5220.945	-	-
Pension	68.1	13,806.57	31064.78	-	-
Any other asset	28.1	10,917.47	24564.31	-	-
Debts (incl. mortgage debt)	92.2	36,439	81987.75	-	-

Notes:First Four Columns Reproduced from Rowe and Morrow (1988)

[19]the mean value in PSID sample in columns 5-6 is conditional on having home ownership.

Table 4: Estimated Coefficients on Future Policy on Couples Married prior to the Reform

	Dependent Variables: Wives'		
Independent variable:	**Annual work hours**	**Annual housework hours**	**Labor force participation**
1-5 Years Prior to Implementation of Homemaking Provision	-23.68	-61.58	-0.003
	(66.04)	(54.02)	(0.003)
N	22,559	19,579	22,559
Individual Fixed Effects	2150	1948	2150

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level;*variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 5: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Annual Hours of Housework and Leisure of Wives Married Prior to the Reform

	Dependent Variables: Wives'			
Indepedent Variables:	**Hours of Housework**		**Hours of Leisure**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	48.40	-77.99	-12.41	-42.96
	(30.95)	(52.65)	(33.83)	(53.95)
Provision 6-10 years	1.380	-177.2	23.63	-84.73
	(47.10)	(76.77)	(53.67)	(75.61)
Provision 10+ years	3.999	-76.67	80.42	-59.87
	(69.91)	(101.0)	(77.92)	(108.6)
Provision 1-5 years*uni	-	163.1***	-	35.91
		(55.3)		(57.01)
Provision 6-10 years*uni	-	154.1**	-	127.2*
		(76.48)		(73.00)
Provision 10+ years*uni	-	117.4	-	174.7*
		(99.29)		(103.1)
Controls for Unilateral and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	19,579	19,579	19,579	19,579
Individual Fixed Effects	1948	1948	1948	1948

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 6: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Labor Force Participation and Annual Hours of Market Work of Wives Married Prior to the Reform

	Dependent Variables: Wives'			
Independent Variables:	**Labor Force Participation**		**Hours of Market Work**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	-0.025	0.042	-43.97	121.3**
	(0.019)	(0.034)	(35.04)	(60.54)
Provision 6-10 years	-0.015	0.082*	-32.26	201.5**
	(0.030)	(0.046)	(57.36)	(83.08)
Provision 10+ years	-0.015	0.118**	-86.00	146.5
	(0.030)	(0.059)	(83.62)	(105.8)
Provision 1-5 years*uni	-	-0.083**	-	-209.6***
		(0.035)		(63.55)
Provision 6-10 years*uni	-	-0.115***	-	-287.0***
		(0.044)		(81.52)
Provision 10+ years*uni	-	-0.192***	-	-304.2***
		(0.058)		(101.0)
Controls for Unilateral and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	22,559	22,559	22,559	22,559
Individual Fixed Effects	2150	2150	2150	2150

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 7: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Annual Hours of Housework and Leisure of Husbands Married Prior to the Reform

	Dependent Variables: Husbands'			
Independent Variables	**Hours of Housework**		**Hours of Leisure**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	-9.703	-26.35	23.26	-56.74
	(12.75)	(21.05)	(27.61)	(47.20)
Provision 6-10 years	-8.96	-15.00	55.90	-54.73
	(19.50)	(33.53)	(45.14)	(70.29)
Provision 10+ years	-56.63	-83.86**	141.1**	128.3
	(28.35)	(43.22)	(66.22)	(114.2)
Provision 1-5 years*uni	-	21.49	-	102.9**
		(23.35)		(51.17)
Provision 6-10 years*uni	-	7.455	-	143.7*
		(34.74)		(47.77)
Provision 10+ years*uni	-	36.18	-	26.17
		(42.90)		(122.6)
Controls for Unilateral	X	X	X	X
and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	19,579	19,579	19,579	19,579
N	1947	1947	1947	1947
Individual Fixed Effects	1948	1948	1948	1948

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 8: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Labor Force Participation and Annual Hours of Market Work of Husbands Married Prior to the Reform

	Dependent Variables: Husbands'			
Independent Variables:	**Labor Force Participation**		**Hours of Market Work**	
	(1)	(2)	(1)	(2)
Provision 1-5 years	-0.004	0.012	-13.27	78.62*
	(0.007)	(0.011)	(26.51)	(43.67)
Provision 6-10 years	-0.010	0.025	-52.76	56.09
	(0.012)	(0.016)	(43.21)	(67.27)
Provision 10+ years	-0.019	0.028	-99.09	-67.13
	(0.020)	(0.026)	(64.18)	(100.9)
Provision 1-5 years*uni	-	-0.020	-	-118.8***
		(0.013)		(47.84)
Provision 6-10 years*uni	-	-0.042**	-	-139.9**
		(0.018)		(70.61)
Provision 10+ years*uni	-	-0.059**	-	-50.65
		(0.026)		(109.4)
Controls for Unilateral and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	22,559	22,559	22,559	22,559
Individual Fixed Effects	2150	2150	2150	2150

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 9: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on House Value and Home Ownership for Households Married Married Prior to the Reform

Independent Variables:	**Dependent Variables:**			
	ln home value		**Home Ownership**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	0.018	-0.093***	0.030**	0.034*
	(0.021)	(0.031)	(0.013)	(0.021)
Provision 6-10 years	-0.019	0.150***	0.058**	0.119***
	(0.033)	(0.050)	(0.023)	(0.039)
Provision 10+ years	-0.076	0.049	0.056*	0.064
	(0.048)	(0.066)	(0.034)	(0.049)
Provision 1-5 years*uni	-	0.155***	-	-0.003
		(0.034)		(0.023)
Provision 6-10 years*uni	-	-0.189***	-	-0.074**
		(0.052)		(0.038)
Provision 10+ years*uni	-	-0.133**	-	-0.006
		(0.068)		(0.048)
Controls for Unilateral and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	17,166	17,166	22,556	22,556
Individual Fixed Effects	1677	1677	2150	2150

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 10: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Annual Hours of Housework and Leisure of Wives

	Dependent Variables: Wives'			
Independent Variables:	**Hours of Housework**		**Hours of Leisure**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	2.398	-123.2***	-25.47	-12.76
	(27.53)	(47.60)	(28.28)	(49.77)
Provision 6-10 years	-60.56*	-201.5***	-23.88	-65.34
	(35.49)	(62.31)	(37.83)	(60.84)
Provision 11-15 years	-72.70	-223.0***	39.21	14.92
	(45.85)	(74.32)	(51.09)	(81.73)
Provision 1-5 years*uni	-	151.5***	-	-17.79
		(51.47)		(53.21)
Provision 6-10 years*uni	-	164.9***	-	49.06
		(65.33)		(63.29)
Provision 11-15 years*uni	-	182.7**	-	28.09
		(79.43)		(84.79)
Controls for Unilateral and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	38,840	38,840	38,840	38,840
Individual Fixed Effects	3571	3571	3571	3571

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 11: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Labor Force Participation and Annual Hours of Market Work of Wives

	Dependent Variables: Wives'			
Independent Variables:	**Labor Force Participation**		**Hours of Market Work**	
	(1)	(2)	(1)	(2)
Provision 1-5 years	0.008	0.068**	4.749	130.0**
	(0.016)	(0.031)	(30.71)	(56.71)
Provision 6-10 years	0.034*	0.138***	63.88	257.9***
	(0.021)	(0.037)	(41.44)	(68.37)
Provision 10+ years	0.032	0.172***	10.59	206.3***
	(0.028)	(0.045)	(53.85)	(82.77)
Provision 1-5 years*uni	-	-0.072**	-	-149.8***
		(0.032)		(59.37)
Provision 6-10 years*uni	-	-0.119	-	-226.7***
		(0.037)		(71.72)
Provision 10+ years*uni	-	-0.170***	-	-235.9***
		(0.047)		(86.18)
Controls for Unilateral and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	43,949	43,949	43,949	43,949
Individual Fixed Effects	3881	3881	3881	3881

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 12: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Annual Hours of Housework and Leisure of Husbands

	Dependent Variables: Husbands'			
Independent Variables:	**Hours of Housework**		**Hours of Leisure**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	3.012	-11.93	-7.215	-88.61**
	(11.31)	(18.93)	(24.31)	(45.10)
Provision 6-10 years	5.071	-2.341	-4.117	-69.59
	(15.49)	(27.60)	(34.98)	(64.49)
Provision 10+ years	-6.40	-29.00	31.90	-20.96
	(21.19)	(34.68)	(44.50)	(88.97)
Provision 1-5 years*uni	-	18.28	-	99.60**
		(20.81)		(49.05)
Provision 6-10 years*uni	-	7.641	-	82.22
		(29.12)		(68.42)
Provision 10+ years*uni	-	27.87	-	64.43
		(36.64)		(92.36)
Controls for Unilateral	X	X	X	X
and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	38,849	38,849	38,849	38,849
N	3570	3570	3570	3570
Individual Fixed Effects	3881	3881	3881	3881

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 13: Individual Fixed Effect Estimates of the Effect of the Homemaking Provisionon on Labor Force Participation and Annual Hours of Market Work of Husbands

Independent Variables:	**Dependent Variables: Husbands' Labor Force Paricipation**		**Hours of Market Work**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	-0.002	0.014	-1.544	94.04**
	(0.006)	(0.010)	(23.67)	(42.66)
Provision 6-10 years	-0.007	0.023**	-19.07	60.83
	(0.009)	(0.014)	(33.91)	(61.70)
Provision 10+ years	-0.011	0.038**	-43.07	36.23
	(0.013)	(0.019)	(43.96)	(88.11)
Provision 1-5 years*uni	-	-0.018	-	-117.9***
		(0.012)		(45.98)
Provision 6-10 years*uni	-	-0.034**	-	-93.65
		(0.016)		(64.91)
Provision 10+ years*uni	-	-0.059***	-	-96.39
		(0.021)		(91.29)
Controls for Unilateral and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	43,949	43,949	43,949	43,949
Individual Fixed Effects	3881	3881	3881	3881

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 14: Individual Fixed Effect Estimates of the Effect of the Homemaking Provision on Home Value and Home Ownership of Households

Independent Variables:	**Dependent Variables:** **ln home value**		**Home Ownership**	
	(1)	**(2)**	**(1)**	**(2)**
Provision 1-5 years	0.020	-0.088***	0.016	0.009
	(0.022)	(0.028)	(0.124)	(0.208)
Provision 6-10 years	0.010	0.154***	0.035*	0.074**
	(0.030)	(0.044)	(0.019)	(0.034)
Provision 10+ years	-0.0001	0.098*	0.0590*	0.071*
	(0.040)	(0.057)	(0.025)	(0.041)
Provision 1-5 years*uni	-	0.142***	-	0.010
		(0.030)		(0.023)
Provision 6-10 years*uni	-	-0.166***	-	-0.047
		(0.047)		(0.035)
Provision 10+ years*uni	-	-0.111*	-	-0.014
		(0.061)		(0.044)
Controls for Unilateral a and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	32,082	32,082	43,949	43,949
Individual Fixed Effects	2959	2959	3881	3881

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors are in brackets.

Table 15: State Fixed Effect Estimates of the Effect of the Homemaking Provision on State Level Marriage, Divorce and Birth Rate[20]

Independent Variables:	**Dependent Variables:** **Marriage Rate**	**Divorce Rate**	**Birth Rate** **(1)**	**(2)**
Provision 1-5 years	0.428*	0.176*	1.240***	0.875
	(0.249)	(0.094)	(0.489)	(0.590)
Provision 6-10 years	1.198***	0.424***	1.572***	2.006***
	(0.237)	(0.108)	(0.305)	(0.547)
Provision 10+ years	2.201***	0.691***	1.651***	2.057***
	(0.247)	(0.122)	(0.303)	(0.646)
Provision 16+ years	2.690***	1.248***	1.523***	1.138*
	(0.262)	(0.127)	(0.280)	(0.620)
Provision 1-5 years*uni	2.725***	1.585***	1.703***	0.691
	(0.282)	(0.137)	(0.285)	(0.578)
Provision 6-10 years*uni	2.666***	1.770***	2.045***	1.022
	(0.340)	(0.158)	(0.334)	(0.765)
Provision 10+ years*uni	-	-	-	0.541
				(0.666)
Provision 15+ years*uni	-	-	-	-0.629
				(0.567)
Provision 11-15 years*uni	-	-	-	-0.605
				(0.679)
Provision 16-20 years*uni	-	-	-	0.425
				(0.661)
Provision 21-25 years*uni	-	-	-	1.281**
				(0.624)
Provision 26+ years*uni	-	-	-	1.270
				(0.871)
Controls for Unilateral, Community Property and Equitable Distribution law	X	X	X	X
Demographics	X	X	X	X
State Fixed Effects	X	X	X	X
Year Fixed Effects	X	X	X	X
N	1890	1767	1901	1901

Notes: ***variable is statistically significant at 1% level; **variable is statistically significant at 5% level; *variable is statistically significant at 10% level. Robust standard errors clustered at the state-year level are in brackets.

Table 16 :Robustness Check for the Effect of Homemaking Provision on State Level Marriage Rate

	Dependent Variable: Marriage Rate					
Independent Variables:						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Provision 1-5 years	0.428*	0.408	0.432*	0.042*	0.052***	0.252
	(0.249)	(0.252)	(0.249)	(0.246)	(0.186)	(0.188)
Provision 6-10 years	1.198***	1.211***	1.177***	1.184***	1.090***	0.820***
	(0.237)	(0.239)	(0.239)	(0.238)	(0.267)	(0.286)
Provision 11-15 years	2.201***	2.185***	2.131***	2.093***	1.866***	1.837***
	(0.247)	(0.249)	(0.250)	(0.248)	(0.356)	(0.308)
Provision 16-20 years	2.690***	2.658***	2.602***	2.493***	2.032***	2.373***
	(0.262)	(2.620)	(0.264)	(0.262)	(0.452)	(0.535)
Provision 21-25 years	2.725***	2.694***	2.629***	2.492***	1.659***	2.495***
	(0.282)	(0.280)	(0.283)	(0.277)	(0.542)	(0.651)
Provision 26+ years	2.666***	2.664***	2.583***	2.398***	1.139***	2.337***
	(0.340)	(0.336)	(0.340)	(0.335)	(0.678)	(0.742)
Controls for Unilateral, Community Property and Equitable Distribution law	X	X	X	X	X	X
Demographics	X	X	X	X	X	X
State Fixed Effects	X	X	X	X	X	X
Year Fixed Effects	X	X	X	X	X	X
Joint Custody Law		X	X	X	X	X
Mandatory Income Withholding for Child Support			X	X	X	X
Proportion of Democrats in House				X	X	X
State-Specific Linear Time Trends					X	
State-Specific Quaratic Time Trends						X
N	1890	1890	1890	1852	1852	1852
R-squared	0.849	0.850	0.851	0.854	0.939	0.956

Note: *** variable is statistically significant at 1% level; ** variable is statistically significant at 5% level; * variable is statistically significant at 10% level. Robust standard errors clustered at the state-year level are in brackets.

Table 17: Robustness Check for the Effect of Homemaking Provision on State Level Divorce Rate

	Dependent Variable: Divorce Rate					
Independent Variables:						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Provision 1-5 years	0.176*	0.176*	0.166*	0.170*	-0.016	0.078
	(0.094)	(0.095)	(0.094)	(0.094)	(0.086)	(0.093)
Provision 6-10 years	0.424***	0.424***	0.438***	0.435***	-0.031	0.127
	(0.108)	(0.108)	(0.108)	(0.107)	(0.136)	(0.151)
Provision 11-15 years	0.691***	0.687***	0.711***	0.694***	-0.004	0.214
	(0.122)	(0.122)	(0.122)	(0.121)	(0.175)	(0.196)
Provision 16-20 years	1.248***	1.243***	1.270***	1.228***	0.150	0.427*
	(0.127)	(0.126)	(0.127)	(0.128)	(0.216)	(0.243)
Provision 21-25 years	1.585***	1.580***	1.611***	1.562***	0.218	0.529*
	(0.137)	(0.137)	(0.138)	(0.141)	(0.267)	(0.295)
Provision 26+ years	1.770***	1.766***	1.802***	1.737***	0.008	0.273
	(0.158)	(0.158)	(0.161)	(0.165)	(0.325)	(0.339)
Controls for Unilateral, Community Property and Equitable Distribution law	X	X	X	X	X	X
Demographics	X	X	X	X	X	X
State Fixed Effects	X	X	X	X	X	X
Year Fixed Effects	X	X	X	X	X	X
Joint Custody Law		X	X	X	X	X
Mandatory Income Withholding for Child Support			X	X	X	X
Proportion of Democrats in House				X	X	X
State-Specific Linear Time Trends					X	
State-Specific Quaratic Time Trends						X
N	1767	1767	1767	1729	1729	1729
R-squared	0.901	0.901	0.902	0.904	0.953	0.961

Note: *** variable is statistically significant at 1% level; ** variable is statistically significant at 5% level; * variable is statistically significant at 10% level. Robust standard errors clustered at the state-year level are in brackets.

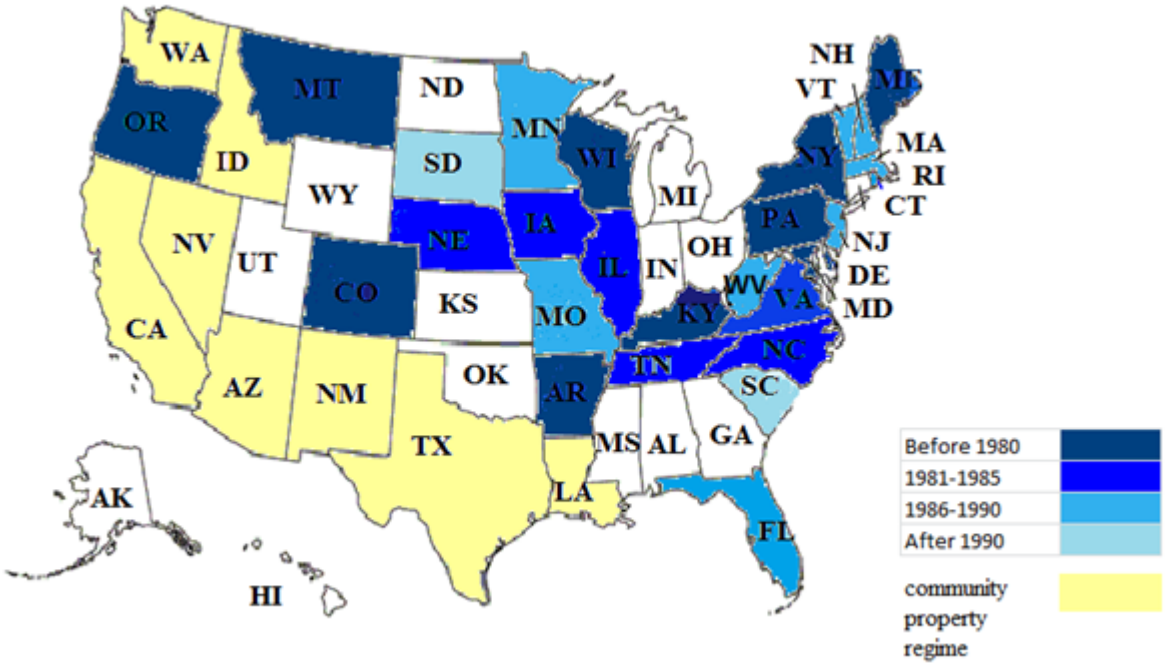
Table 18: Robustness Check for the Effect of Homemaking Provision on State Level Birth Rate

	Dependent Variable: Birth Rate					
Independent Variables:						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Provision 1-5 years	1.240***	1.233***	1.253***	1.291***	0.887*	0.571
	(0.489)	(0.490)	(0.490)	(0.485)	(0.508)	(0.550)
Provision 6-10 years	1.572***	1.577***	1.548***	1.516***	0.636	0.733
	(0.305)	(0.307)	(0.306)	(0.306)	(0.419)	(0.498)
Provision 11-15 years	1.651***	1.646***	1.602***	1.595***	0.178	0.698
	(0.303)	(0.303)	(0.304)	(0.301)	(0.545)	(0.635)
Provision 16-20 years	1.523***	1.512***	1.465***	1.536***	-0.441	0.490
	(0.280)	(0.281)	(0.283)	(0.279)	(0.643)	(0.784)
Provision 21-25 years	1.703***	1.692***	1.638***	1.735***	-0.714	0.428
	(0.285)	(0.286)	(0.289)	(0.289)	(0.747)	(0.952)
Provision 26+ years	2.045***	2.044***	1.978***	2.090***	-0.885	0.288
	(0.334)	(0.334)	(0.342)	(0.357)	(0.910)	(1.117)
Controls for Unilateral, Community Property and Equitable Distribution law	X	X	X	X	X	X
Demographics	X	X	X	X	X	X
State Fixed Effects	X	X	X	X	X	X
Year Fixed Effects	X	X	X	X	X	X
Joint Custody Law		X	X	X	X	X
Mandatory Income Withholding for Child Support			X	X	X	X
Proportion of Democrats in House				X	X	X
State-Specific Linear Time Trends					X	
State-Specific Quaratic Time Trends						X
N	1901	1901	1901	1863	1863	1863
R-squared	0.580	0.580	0.580	0.585	0.668	0.722

Note: *** variable is statistically significant at 1% level; ** variable is statistically significant at 5% level; * variable is statistically significant at 10% level. Robust standard errors clustered at the state-year level are in brackets.

Appendix A: Years of Implementations of Divorce Reforms

FIGURE 10. Homemaking Provision in Divorce Law across States: Year of Enactment of the Homemaking Provision Established for Division of Marital Property in Divorce Law



Note:Wisconsin became a community property regime in 1986.

Table A-1:Year of Enactment of the Homemaking Provision Established for Division Division of Marital Property in Divorce Law

State	Enactment Year	State	Enactment Year
Alabama	-	New York	1980
Alaska	-	North Carolina	1984
Arizona	community property	North Dakota	-
Arkansas	1978	Ohio	-
California	community property	Oklahoma	-
Colorado	1973	Oregon	1977
Connecticut	-	Pennsylvania	1980
Delaware	1980	Rhode Island	1983
District of Columbia	1981	South Carolina	2008
Florida	1985	South Dakota	1991
Georgia	-	Tennessee	1984
Hawaii	-	Texas	community property
Idaho	community property	Utah	-
Illinois	1981	Vermont	1988
Indiana	–	Virginia	1981
Iowa	1982	Washington	community property
Kansas	-	West Virginia	1988
Kentucky	1972	Wisconsin	1977
Louisiana	community property	Wyoming	-
Maine	1979		
Maryland	1980		
Massachusetts	1987		
Michigan	-		
Minnesota	1987		
Mississippi	-		
Missouri	1986		
Montana	1975		
Nevada	1984		
New Hampshire	community property		
New Jersey	1987		
New Mexico	community property		

Note:Wisconsin became a community property regime in 1986.

Table A-2: Year of Enactment of Unilateral Divorce Law and Equitable Distribution

State	Unilateral Divorce	Equitable Distribution	State	Unilateral Divorce	Equitable Distribution
Alabama	1971	1984	North Carolina	1967	1981
Alaska	1967	pre-1967	North Dakota	1971	pre-1967
Arizona	1973	community property	Ohio	1974	1981
Arkansas	-	1977	Oklahoma	1967	1975
California	1970	community property	Oregon	1973	1971
Colorado	1973	1972	Pennsylvania	1980	1980
Connecticut	1973	1973	Rhode Island	1976	1981
Delaware	-	pre-1967	South Carolina	1969	1985
District of Columbia	-	1977	South Dakota	1985	pre-1967
Florida	1971	1980	Tennessee	-	pre-1967
Georgia	1973	1977	Texas	1974	community property
Hawaii	1973	pre-1967	Utah	1967	pre-1967
Idaho	1971	community property	Vermont	1967	pre-1967
Illinois	1981	1977	Virginia	1967	1982
Indiana	1973	pre-1967	Washington	1973	community property
Iowa	1970	pre-1967	West Virginia	1967	1985
Kansas	1969	pre-1967	Wisconsin	1977	community property
Kentucky	1972	1976	Wyoming	1977	pre-1967
Louisiana	1967	community property			
Maine	1973	1972			
Maryland	1967	1978			
Massachusetts	1975	1974			
Michigan	1972	pre-1967			
Minnesota	1974	pre-1967			
Mississippi	-	1989			
Missouri	1973	1977			
Montana	1975	1976			
Nebraska	1972	1972			
Nevada	1973	community property			
New Hampshire	1971	1977			
New Jersey	1988	1974			
New Mexico	1973	community property			
New York	-	1980			

Notes: The coding for unilateral divorce comes from Friedberg (1998).The coding for equitable distribution is from Voena (2012).

Appendix B: First Best Benchmark and Source of Ineffiicency in the Model

The First Best Benchmark:

One primary gain of family formation is that it permits the sharing of public goods and specialization within households. Home production performed by wives is one of the major sources of such gain. There is no problem of underprovision of public goods including housework as the household in principle just operates like a firm that will never dissolve. Optimal co-operation within households can be achieved and spouses would act to maximize households' net gain irrespective of the distribution of the resources produced.

Consider the benchmark in which couples never divorce and they maximize their joint utilities by choosing the time they allocate to housework and market work and the amount they spend on private consumption and the home asset, which is given by:

$$U_m^M + U_f^M = \max_{(c_m,c_f,g_m,g_f,l_m,l_f,h_m,h_f)} \sum_{i=m,f} c_i + v_i(G_1) + G_2 \tag{7.1}$$

Subject to the budget constraint:

$$\sum_{i=m,f} w_i h_i = \sum_{i=m,f} c_i + pg_i \tag{7.2}$$

The time constrint for i=m,f:

$$l_i + h_i = 1 \tag{7.3}$$

The first best amount of time spent on housework and investment in home assets are defined by the following first order conditions:

$$2[\gamma_i f^{'}(l_i^*)] = w_i \tag{7.4}$$

$$v_m^{'} + v_f^{'} = p \tag{7.5}$$

These are the Samuelson condition for public good provision. (7.4) states that the joint marginal utility from the marginal product of the domestic labor is equal to the market wage of the spouse. (7.5) means optimally the joint marginal utility for the home asset is equal to its market price.

The source of inefficiency in time allocation in this model comes from that couples behave non-cooperatively.

Proposition 1. *The optimal level of l_f in this non-cooperative setting must be below the first best level.*

Proof. Recall from (7.4) when couples allocate their time cooperatively, the first order condition of time they allocate to household must satisfy the Samuelson Condition:

$$2[\gamma_i f^{'}(l_i^*)] = w_i$$

When spouses allocate their time non-cooperatively, let the optimal level of l_f be $\hat{l_i}$, the first order condition for l_f is given by:

$$(1-\beta)\gamma_i f^{'}(\hat{l_i}) + \frac{\theta\gamma_i f^{'}(\hat{l_i})(1+\beta)}{2} = w_i$$

Simplifying we have:

$$\frac{(2-2\beta+\beta\theta+\theta)}{2}\gamma_i f^{'}(\hat{l_i}) = w_i$$

$\because 0 \leq \theta \leq 1$ and $0 \leq \beta \leq 1$, $\Rightarrow \frac{(2-2\beta+\beta\theta+\theta)}{2} < 2$
and f is concave in l_i, $\therefore \hat{l_i} \leq l_i^*$ □