

The Impact of Unilateral Divorce in Mexico: Bargaining Power and Labor Supply

LAUREN HOEHN-VELASCO^{*1} and JACOB PENGLASE^{†2}

¹Bryn Mawr College

²Analysis Group

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From 2008 and 2016, Mexican states introduced unilateral no-fault divorce legislation. Using state-level variation in the timing and adoption of the divorce laws, we study how the reform affected labor supply for married women. Our results suggest that women increased their labor supply at both the extensive and intensive margins. Previous work has attributed similar increases in labor supply to the divorce legislation's impact on women's bargaining power. We empirically test this claim using a structural model of intra-household resource allocation. Our findings do not suggest that women experienced a decline in bargaining power as a result of the reform.

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^{*}Bryn Mawr College (e-mail: lvelasco@brynmawr.edu)

[†]Analysis Group (e-mail: jacob.penglase@analysisgroup.com). The views presented in this paper are those of the author and do not reflect those of Analysis Group or its clients.

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1 Introduction

Between 2008 to 2016, all 32 Mexican states established no-fault unilateral divorce legislation. These reforms allowed individuals to obtain a divorce without the consent of their spouse or the need to prove cause (e.g., infidelity). Since adopting these laws, participating states have experienced steadily increasing divorce rates.¹ The increase in marital instability directly affects women's well-being. The benefits include the ability to escape an abusive or destructive relationship (Stevenson and Wolfers, 2006), while the costs include a higher risk of financial insecurity (Weitzman and Dixon, 1980; Weitzman, 1985). The consequences of unilateral divorce laws, however, extend beyond divorcing couples to those who remain married and those facing the possibility of marriage. For married couples, more liberal divorce laws may trigger a renegotiation of intra-household bargaining power based on the quality of each spouse's outside option; The spouse who places the higher value on exiting the marriage stands to gain from the new regime, which may have corresponding effects on household labor supply, expenditure, and investment decisions.

In this paper, we study the behavior of married couples following the introduction of unilateral divorce. We begin by analyzing the impact of these laws on labor supply using multiple waves of the National Household Income and Expenditures Survey (ENIGH). To identify changes in labor supply, we exploit variation in the timing and location of the divorce laws with a difference-in-differences design. Using this approach, we find that the liberalization of divorce laws increased married women's labor force participation by 6.20 percentage points. Women also increased their labor supply on the intensive margin, working an additional five hours per week. These changes are robust to several alternative specifications and corroborate similar findings by Stevenson (2008) and Bargain et al. (2012).² We also find evidence that women are substituting away from household production and towards market work.

The above labor supply analysis says little about the underlying mechanisms that produce this change in behavior. One potential explanation is that unilateral divorce laws change bargaining power within the marriage. The spouse with the superior divorce outside option now has a higher threat point, and therefore has more control over household decision making. This change then manifests itself through, e.g., changes in labor supply. However, since bargaining power is not observable, reduced-

¹Figure A1 plots divorce rates over time. For a more formal analysis of the impact of unilateral divorce on divorce rates in Mexico, see Hoehn-Velasco and Penglase (2018).

²However, changes in labor supply only hold when we look at married couples with children, which is consistent with Genadek et al. (2007). Genadek et al. (2007) finds distinct responses in mothers and childless women.

form methods are unable to quantify this relationship. To address this issue, we study how the introduction of unilateral divorce affects married women's bargaining power using a structural model of intra-household decision-making. We use the collective household framework (Chiappori, 1988, 1992; Apps and Rees, 1988), which models households as a group of individuals and presumes that households reach a Pareto efficient allocation of goods. Using this framework, we infer bargaining power from a collective model of intra-household resource allocation. The goal of the model is to identify resource shares, defined as the share of the total household budget controlled by each spouse. To accomplish this, we follow Dunbar et al. (2013) and identify resource shares using Engel curves for goods that are consumed exclusively by either men or women. That is, we exploit variation in how men's and women's clothing budget shares vary with household expenditure to identify resource shares (and therefore women's bargaining power).³

We estimate the model using consumption and expenditure data from the ENIGH survey. We focus on nuclear households that consist of one married couple and up to three children. Within the framework of the structural model, we compare the resource shares of married couples across treated and untreated states, before and after the reforms. We find a small decrease in women's bargaining power originating from the introduction of unilateral divorce. However, this result is only marginally significant and not robust to alternative specifications.

We attribute this lack of robustness to several factors. First, women work more when they experience an exogenous decline in bargaining power (e.g., due to unilateral divorce laws), but this higher labor supply may result in greater female bargaining power. Our estimation is not able to disentangle these competing effects. Instead, the results provide some empirical support for this explanation as working women tend to control more of the household budget. Second, marital property laws partially determine the relationship between divorce laws and bargaining power. Depending on the unobservable marital property regime, either spouse could benefit from more liberalized divorce laws as the marital outside option is in part determined how property would be divided in a potential divorce. The net effect of differing property laws across marriages may result in the average effect being close to zero.

This paper makes several contributions to the literature. First, we add to the extensive literature on the employment effects of divorce laws (Parkman, 1992; Gray, 1998; Bremmer and Kesselring, 2004; Genadek et al., 2007; Stevenson, 2008; Bargain et al., 2012; Hassani-Nezhad and Sjögren, 2014). The results of these studies, which focus

³This methodology and similar approaches have been employed in a variety of contexts (Calvi, 2017; Calvi et al., 2017; Penglase, 2018; Tommasi, 2018; Sokullu and Valente, 2018; Brown et al., 2018).

primarily on United States and Europe, may not be generalizable to a middle-income context such as Mexico. In Mexico, there are weaker social safety nets and women's marital exit options are often considerably worse. Moreover, there are significant cultural differences in areas such as religiosity and social norms regarding marriage and divorce, which we discuss in Section 3.

We contribute to this literature by extending the analysis of unilateral divorce and labor supply to Latin America, specifically Mexico.⁴ Second, we complement our reduced-form results by structurally estimating the household bargaining effects of no-fault divorce. Most existing work has attributed changes in labor supply to changes in bargaining power, without empirically testing this hypothesis. We use exogenous variation in divorce laws within a structural model to identify the causal effect of these laws on women's bargaining power. Our approach is similar to Chiappori et al. (2002) and Voena (2015). We discuss how we differ from these studies in Section 2.

The remainder of this study is organized as follows. In Section 2 we summarize the existing literature. Section 3 discusses the cultural context and the introduction of unilateral divorce in the Mexico. In Section 4 we summarize the ENIGH survey. In Section 5, we discuss the empirical strategy and results from our reduced-form analysis of the relationship between divorce laws and labor supply. In Section 6 we structurally analyze the relationship between divorce laws and bargaining power to better understand our reduced-form results. We rationalize our different results in Section 7. Section 8 concludes.

2 Literature Review

This study pertains to two different strands of research. First, our study contributes to work considering the effect of unilateral divorce laws on labor supply. Second, we add to recent research on understanding how public policy influences women's standing within the household.

Unilateral divorce laws have become more widespread in recent years. These laws have been shown to increase divorce rates in a variety of different contexts including the United States (Friedberg, 1998; Wolfers, 2006), several countries in Europe (González and Viitanen, 2009; Kneip and Bauer, 2009), and more recently in Mexico (Hoehn-Velasco and Penglase, 2018). How do divorce laws affect couples who remain married? Given that divorce is now a credible threat, the spouse who values exit-

⁴In general, research on divorce in middle and low-income countries is quite limited, with recent exceptions being Lagoutte et al. (2014) and Lambert et al. (2017).

ing the marriage the most is likely to benefit from the new divorce regime. This shift in bargaining power within the marriage is likely to have a corresponding effect on household behavior.⁵ A large literature has analyzed this hypothesis along several different dimensions, including labor supply, savings decisions, and investments in children. Our study relates primarily to work on the relationship between unilateral divorce laws and labor supply.

A variety of studies (Peters, 1986; Parkman, 1992; Genadek et al., 2007; Stevenson, 2008; Bargain et al., 2012) in several different contexts find that the introduction of unilateral divorce laws increased women's labor supply. These results are often attributed to women wanting to insure themselves against divorce. Gray (1998) studies the consequences of unilateral divorce laws in the United States, and somewhat counterintuitively, attributes changes in women's labor supply to *increased* women's bargaining power. Gray (1998) reaches this conclusion using variation in state-level marital property laws to show that women increased their labor supply and reduced household production in states with property regimes favoring women. More recent work by Heath and Tan (2014) in India finds a positive relationship between women's bargaining power and labor supply. In contrast, Chiappori et al. (2002) interpret higher labor supply as a decrease in bargaining power due to the decline in leisure, though they do not incorporate household production in their analysis. An alternative explanation, discussed in Stevenson (2007) and Stevenson (2008), attributes changes in women's labor supply to decreased investments in marriage-specific capital, such as household production. Roff (2017) finds evidence supporting this hypothesis as both men's and women's household work declined in the US as a result of the introduction of unilateral divorce laws.

We contribute to this literature in two ways. First, our study addresses the conflicting evidence on the relationship between divorce laws, labor supply, and bargaining power by directly estimating changes in market work, household work, leisure, and bargaining power. Second, we add to this literature by analyzing the effects of unilateral divorce on labor supply in a middle-income economy. The wellbeing of women in Mexico is an important policy issue and divorce laws appear to have different effects by gender. Existing work on the introduction of unilateral divorce in Mexico has focused on the effect on divorce rates and domestic violence (Lew and Beleche, 2008; Garcia-Ramos, 2017; Hoehn-Velasco and Penglase, 2018).

Our study also relates to recent work on the relationship between household bargaining power and divorce laws. Similar to our study, Chiappori et al. (2002) structurally estimate the relationship between divorce laws, bargaining power, and labor

⁵See Chiappori et al. (2015) for a detailed model of divorce.

supply. The authors extend the collective labor supply model (Chiappori, 1988, 1992; Apps and Rees, 1988) to include distribution factors, such as divorce laws and the sex ratio.⁶ Voena (2015) extends Chiappori et al. (2002) to a dynamic setting and incorporates asset accumulation and marriage into a life-cycle structural model. Like these studies, we examine the effects of unilateral divorce on both labor supply and bargaining power within the marriage. We differ in two respects; First, instead of using a labor supply model, we infer bargaining power from a collective model of resource allocation (Browning et al., 2013; Dunbar et al., 2013). Because we focus on a middle-income country, female labor supply in market work is uncommon, and wage data is unavailable for most of the sample. By contrast, we observe detailed consumption data. We add to the growing number of studies that have structurally estimated women's bargaining power in the developing world using this framework.⁷ Our second difference is that we can conduct a more causal analysis. Our estimation allows for the inclusion of year and state-fixed effects in identifying the relationship between divorce laws and women's bargaining power, and thus our approach resembles a difference-in-difference identification strategy within a structural model. Voena (2015) is also able to incorporate this type of variation to identify the key model parameters using an indirect inference approach. A weakness of our paper relative to these existing studies is that we are unable to account for the property regime of the marriage, which may impact our results. We discuss this in more detail in Section 7.

Finally, a different strand of research uses dynamic life-cycle models of marriage and divorce to better understand the evolution of married women's labor supply over time. These models estimate, for example, what share of increased labor force participation can be attributed to changes in divorce laws, relative to other potential factors, such as changes in female wages, the marriage market, or access to birth control. Important papers in this literature include Fernández and Wong (2014) and Eckstein et al. (2019) (as well as the previously cited Voena (2015)). Our study complements this literature by zeroing in a single potential cause, by studying changes in marital bargaining power.

More generally, our study adds to work on the influence of public policy on women's standing within the household. A large body of work has examined the role of cash transfers, inheritance laws, family leave, and many other programs designed to improve women's well-being. We focus on divorce laws, which include laws that facilitate divorce proceedings (our paper) as well as laws that deal with child custody, alimony, and property rights. Past work has examined theoretically how divorce

⁶Distribution factors are variables that affect bargaining power within the household, but not preferences for goods.

⁷ See, for example, Bargain et al. (2014); Calvi (2017); Calvi et al. (2017); Tommasi (2018).

laws should affect intra-household dynamics. Becker (1993) applies the Coase theorem to the decision to divorce and determines that divorce rates should remain unchanged, but couples should reallocate goods. More recently, Chiappori et al. (2015) demonstrates that the Coase-Becker theorem only holds under strong assumptions over whether utility is transferable both before and after the dissolution of the marriage. Examples of empirical research in this area include Peters (1986), Gray (1998), Chiappori et al. (2002), Rangel (2006), Voena (2015), among many others.

3 The Mexican Context

Cultural Context

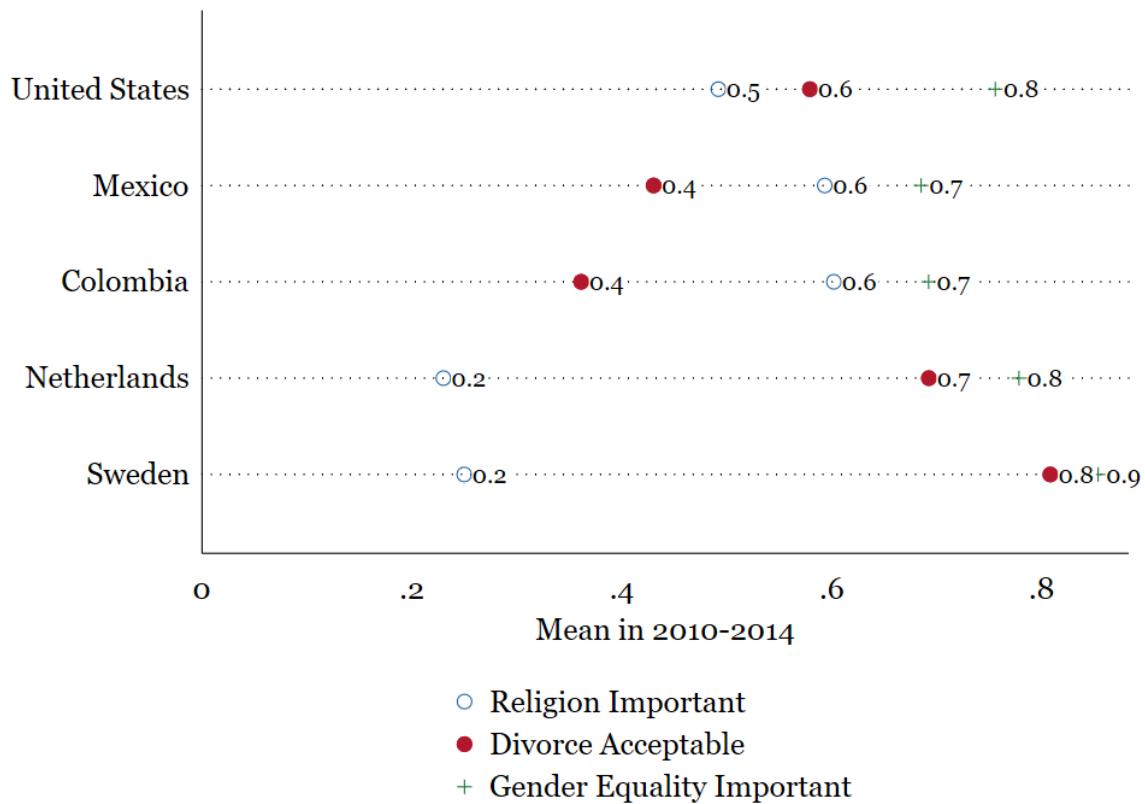
Similar work on the relationship between female labor supply and divorce laws from the United States and Europe may not apply to a Latin American context. Labor market opportunities for women vary substantially across world regions as do social norms surrounding divorce. To illustrate how the values vary across countries, we use the most recent wave of the *World Values Survey* to compare perspectives on divorce, religion, and gender equality.

Figure I presents cultural attitudes towards gender equality, religion, and divorce in two representative Latin American countries, two European countries, and the United States. Columbia and Mexico are the most religious of the five countries, and are also the least receptive of divorce. At the other extreme, Sweden and the Netherlands are not religious, view divorce as acceptable, and place a high value on gender equality. The United States appears to be the most mixed, with the country-level average hovering around 0.5 for divorce and religion, but with a slightly higher emphasis placed on gender equity. Based on the survey results, it is clear that Mexico, and Latin America more generally, differ in fundamental ways from the other world regions. As a result, we can not simply generalize existing work from other cultural contexts to a country like Mexico.

Divorce in Mexico

For most of its history, obtaining a divorce in Mexico has been an arduous process. To be granted a divorce, either the divorcing spouse had to prove cause or both spouses needed to consent to terminate the marriage. Legal reforms in the 1990s and

Figure I: Cultural Differences between Countries, World Values Survey



NOTES: Figure reports how important individuals in each country view religion, the acceptance of divorce, and views on gender equality. All three measures calculated on a scale from 0 to 1.

SOURCE: World Values Survey, Wave 6 (2010-2014).

early 2000s relaxed some of the hurdles faced by divorcing couples, but the process was still time-consuming. More drastic changes began in 2008 when Mexico City implemented no-fault unilateral divorce. This legislation allowed one spouse to dissolve the marriage without the consent of their spouse. Hidalgo adopted similar legislation in 2011, and as of 2016, 29 of Mexico's 32 states (including Mexico City) have done the same.

Past work has demonstrated that the introduction of unilateral divorce in Mexico dramatically increased divorce rates ([Hoehn-Velasco and Penglase, 2018](#)).⁸ To illustrate this point, we present country-level trends in divorce rates in Figure A1. Following the law change in 2008, divorce rates began to rise with the majority of the increase attributable to newly minted unilateral divorces. The immediate impact of the legislation is muted by the fact that only one state passed the reform in 2008 and the rest after 2011. Due to this adoption pattern, we observe a steady decline in other divorce types including "with cause" and "mutual consent" divorce.

⁸While divorce rates increase, [Hoehn-Velasco and Penglase \(2018\)](#) shows that there is little effect on marriage rates and fertility rates.

The effect of the legislation on divorce rates is more apparent in a disaggregated presentation of the divorce rate. Figure A2 shows the state-by-state reform impact, where the dashed vertical line indicates the introduction of unilateral divorce. Each state subfigure demonstrates the substantial increase in unilateral divorces, as well as the decline of for-cause divorce filings. Moreover, depending on the state, mutual consent divorces also were replaced by unilateral divorces. In Mexico City, consenting divorces were relatively stagnant, but in Sinaloa and Coahuila de Zaragoza, mutual consent divorces dropped to almost zero.

4 Data

We use individual- and household-level data from the National Household Income and Expenditures Survey (ENIGH) over the years 2008, 2010, 2012, 2014, and 2016. The ENIGH is a repeated cross-section with sample sizes ranging from 8,861 households in 2012 to 69,169 households in 2016. The survey includes detailed information on income, consumption, and time use. We combine the ENIGH data with national divorce microdata from the Instituto Nacional de Estadística y Geografía (INEGI). The INEGI database provides a record of each divorce in Mexico over 2005-2017. We aggregate the INEGI divorce data to the municipal level and state level to create controls for each individual.

Table 1 presents the summary statistics for the ENIGH and INEGI data over the main estimation sample. We report the mean of each variable for the 2008-2016 sample years. The sample includes all married couples who are household heads or wives of the household heads. The primary outcomes and controls are shown in Table 1, and include labor supply, hours worked, and time use. Between 40 and 50 percent of the sample of women work, and these women work, on average, 17 hours per week. There is a significant increase in women working in 2012 which continues to 2016. Women clearly spend the majority of their weekly time on household chores, doing on average, 38 hours of household work per week. The average woman in our sample has one and a half children, is 41, and lives outside of urban areas.

Table 1: Summary Statistics for Women 18-60

	2008	2010	2012	2014	2016	Total
ENIGH-Individual						
Age	40.88	41.15	41.28	41.58	41.70	41.39
Income (K)	11.40	11.85	11.54	13.27	12.72	12.31
# Children	1.84	1.74	1.69	1.61	1.57	1.67
1(Literate)	0.93	0.92	0.92	0.95	0.96	0.94
1(Urban)	0.24	0.24	0.38	0.27	0.38	0.31
1(Child <5)	0.25	0.24	0.24	0.23	0.22	0.24
1(Working)	0.40	0.39	0.50	0.48	0.51	0.46
Work Hours	15.89	15.68	17.50	17.49	18.22	17.13
Household Work Hours	38.82	39.99	39.04	38.44	38.70	38.95
Leisure Hours	12.43	16.37	15.07	14.32	15.17	14.71
Reported Hours	65.16	71.79	71.30	70.13	71.97	70.24
INEGI-Municipal						
Ratio Female to Male Initiated	0.83	0.77	0.72	0.78	0.80	0.79
Marriage Rate	4.44	4.81	4.67	4.82	5.88	5.18
Divorce Rate	0.90	0.98	1.08	1.34	2.45	1.64

NOTES: The sample includes all married couples who are household heads or wives of the household heads. Income is quarterly nominal income and is reported in pesos.

SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016.

Divorce Legislation Data

To measure the timing of the reform, we collect the quarter-year passage of unilateral no-fault divorce from the state-level civil and family laws.⁹ Table A1 shows the year the legislation passed and the location of the divorce legislation in the state's legal code. A distinction is made between states that record divorce law in the civil codes versus family codes. There are two notable issues with the divorce reform data.

The first limitation is that the legal dates of the reform frequently differ from the observed dates of no-fault unilateral divorce in the INEGI data. We highlight this issue by separating *de jure* years from *de facto* years in Table A1.¹⁰ Comparing across *de facto* years and *de jure* years, it is clear there are discrepancies between when a state passed the reform and when an individual could exercise the right a no-fault divorce in practice. The blue text indicates when there is a mismatch by year. There are 13 states that mismatch years. An additional seven states are off by one quarter (but match years).¹¹ A further seven states match years but the dates differ by more than

⁹Note that we frequently rely on popular press articles surrounding the reform to measure the precise dates that the law passed. We corroborate our findings with the reform dates provided in Mendez-Sanchez (2014) and Garcia-Ramos (2017), who also study no-fault divorce in Mexico.

¹⁰In the *de jure* column, states that do not show evidence of having passed unilateral divorce as of 2017 have blank years.

¹¹These states include Aguascalientes, Baja California Sur, Colima, Mexico City, Nayarit, Sinaloa, an

one quarter.¹² Only four states exactly match between *de facto* dates and *de jure* dates, suggesting an immediate implementation of no-fault divorce in these states.¹³ For our main analysis, we rely on the observed *de facto* dates rather than the *de jure* legal reforms. We default to the observed *de facto* dates because we are most interested in when states allowed individuals to obtain a unilateral divorce, not when the states put the legislation on the books. In a robustness check, we also check the *de jure* dates to see if the results hold (see Table 3).

The second limitation of the data, is many states adopted a *de jure* unilateral practice after 2015. Given our sample period ends in 2016, this is not ideal, but there is still enough variation to obverse the effect.

5 Unilateral Divorce and Labor Supply

5.1 Empirical Strategy

To study the effect of unilateral divorce laws on household behavior, we exploit state-level variation in the timing and adoption of no-fault divorce legislation. We implement a difference-in-differences regression model for individual i in state s during year t as:

$$Y_{ist} = \alpha + \beta(\text{Uni}_s \times \text{Post}_t) + \mathbf{X}'_{ist} + \phi_s t + \gamma_s + \tau_t + \epsilon_{ist} \quad (1)$$

where Y_{ist} is our outcome of interest, including measures of labor supply and time use. Uni_s indicates state-level adoption of unilateral divorce. Post_t denotes whether the state has adopted the divorce reform as of the first quarter of year t . $\phi_s t$ are state-specific time trends, which help to assuage any concern about differing trends between states. γ_s and τ_t are the state and year fixed effects, respectively. X_{ist} is a vector of individual controls. Individual controls include age, age-squared, indicators for education, urban-rural status, the number of children, an indicator for child under age five. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. We also include a dummy variable indicating state-level passage of the *Ley General de Acceso a Una Vida Libre de Violencia*.¹⁴

In several specifications, we diverge from OLS to estimate either a Probit or a To-

¹²States include Guerrero, Hidalgo, Morelos, Oaxaca, Sonora, Veracruz, and Yucatan.

¹³The four matching states include Coahuila, Mexico, Tlaxcala, and Puebla.

¹⁴The number of children may also be affected by the introduction of unilateral divorce laws making it problematic to include as a control variable.

bit model. First, for any specification where our outcome is a binary variable, we rely on a Probit model and report average marginal effects. Second, because we use hours worked as a dependent variable, and over 50 percent of women do not participate in market work, our dependent variable is censored from below at zero. To account for this censoring, we employ a Tobit Model (Tobin, 1958) in Equation (1).¹⁵ The estimating equations appear as:

$$\begin{aligned} Y_{ist} &= \max\{0, Y_{ist}^*\} \\ Y_{ist}^* &= \alpha + \tilde{\beta} (\text{Uni}_s \times \text{Post}_t) + X'_{ist} + \phi_s t + \gamma_t + \tau_t + \epsilon_{ist} \end{aligned} \quad (2)$$

where Y_{ist} is observed hours worked (in the market or household production) or leisure, and Y^* is the latent variable. The model is estimated via maximum likelihood where $\epsilon_{ist} \sim N(0, \sigma^2)$.

5.2 Labor Supply Results

Main Results

Table 2 presents the difference-in-differences results from Equation 1 for married women who are wives of the household head and are between 18 and 60 years old. We choose this range of ages as older or younger women are unlikely to be affected by the reform. Columns (1)-(3) show the extensive measures of labor supply, while Columns (4)-(6) show the intensive measures.

From the reported coefficients in Column (1), women are more likely to be working in the post-reform periods. Following the reform, married women are 6.20 percentage points more likely to have worked in the prior week. In Column (2), the majority of the additional labor supply appears to be in the form of part-time work. Married women are 4.1 percentage points more likely to be working in a part-time position after the reform. There does not appear to be any statistically significant change in full-time work for women, as shown in Column (3).

This increase in extensive margin labor force participation corroborates similar findings in Bargain et al. (2012), where women increase their labor force participation in response to the legalization of divorce in Ireland. Stevenson (2008) also finds similar increases in labor supply in United States' as a result of the introduction of unilateral

¹⁵Ignoring this censoring would result in inconsistent estimates, and dropping these women would result in selection bias. Nonetheless, we estimate several alternative specifications that ignore this problem to match the literature.

divorce. In both contexts, women respond to the exogenous rise in marital dissolution risk by increasing their labor force participation. The magnitude of the estimate here is closer to the results in [Bargain et al. \(2012\)](#), who find a 5-7 percentage point increase in labor supply. [Stevenson \(2008\)](#) observes only a one percentage point increase in female employment, a smaller effect than Table 2 suggests.

Table 2: Unilateral Divorce Reform and Married Women's Labor Supply

	1(Work)	1(Part-time)	1(Full-time)	Hours Worked	Household Hours	Leisure Hours
	(1)	(2)	(3)	(4)	(5)	(6)
Uni x Post	-0.028 (0.028)	-0.011 (0.016)	-0.014 (0.021)	-1.099 (0.946)	-1.194 (2.317)	2.035 (1.539)
N	63,959	63,959	63,959	63,959	63,202	63,585
Mean Dep	0.46	0.27	0.21	17.13	38.95	14.71
Controls	X	X	X	X	X	X
State x Year Trend	X	X	X	X	X	X

NOTES: Difference-in-difference estimation. OLS coefficients are reported for continuous variables. Binary outcomes are estimated using a Probit and reported coefficients are average marginal effects. Women's hours worked estimated with a Tobit to account for censoring. The sample includes all married couples who are household heads or wives of the household heads. Individual controls include age, age-squared, indicators for education, urban-rural status, the number of children, an indicator for child under age five. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. We also include a dummy variable indicating state-level passage of the *Ley General de Acceso a Una Vida Libre de Violencia*. Part-time work is an indicator that equals one if the individual reports working less than 35 hours per week. Full-time work is an indicator for 35 hours or more hours of work per week. Robust standard errors are clustered at the state level and are reported in parentheses. ***, **, * represent statistical significance at 1, 5 and 10 percent levels.
SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016. Municipality-level variables from the INEGI divorce statistics.

Next, we consider whether women spend more hours in the labor force during the post-reform period. We find that women increase not only their extensive labor supply but also their intensive margin labor supply. Table 2 Column (4) reveals that women work, on average, five more hours per week.

We then examine how women are changing their time allocation over leisure activities and household work. Women who spend more time in the labor force may have less time to contribute to previously unavoidable tasks such as household chores. Columns (2) and (3) report the results from an OLS estimation. Neither coefficient reveals a statistically significant change following the reform. Based on hours spent on each task, Women do not appear to be replacing their household or leisure hours with market work. To address the fact that individuals may misreport their total number of hours during a given week, we normalize the time use of individuals into shares of the total reported hours. We consider the proportion of time spent on each activity in Appendix Table A2, where the denominator is the total hours reported per week, which is the sum of market work, household work, and leisure time. In Table A2, women

appear to be increasing the share of time they spend in the workforce and trading off household work. This result makes intuitive sense, as an increased risk of divorce lowers the incentive for women to specialize in household production. The lower share of time spent on household work corroborates related findings in [Roff \(2017\)](#), suggesting that women invest less in the marriage following divorce reforms.

Subsamples of Men and Women

Next, we estimate the model over different subsamples of women in Appendix Table [A3](#). Columns (1)-(2) show all women. Columns (3)-(4) present single women and Columns (5)-(6) show single women in a limited age group. Columns (7)-(8) display married couples with children in a nuclear household. Columns (9)-(10) present married nuclear households without kids.

The most substantial effect occurs in the sample of married women with 0-3 kids. These women are 6.6 percentage points more likely to be working, and they work on average 7.2 hours more per week. The effect disappears for single women and married households without kids. Here our results differ from [Stevenson \(2008\)](#) and [Bargain et al. \(2012\)](#). These related studies find an increase in labor supply for both married and single women. Likely, the differing context of Mexico versus more developed nations explains the differences for single women. There may be incompatible social norms surrounding marriage and familial support in the Mexican setting.

We conclude the subsample analysis by considering how the reform affects men in Appendix Table [A4](#). Because the majority of men are already working pre-reform, we only consider the hours worked for men. Men fail to show an increase in hours worked, except for the younger sample as well as married men with children under five. The results indicate that women are more responsive to men to the change in divorce legislation. The difference between genders is likely due to the fact that women previously specialized in household tasks, whereas men already were already dedicated to market work. Because men previously allocated the majority of their time to market work, they do not respond to the legislation in the same manner that women do.

5.3 Robustness

Main Robustness Checks

Overall, the difference-in-differences estimation reveals that women are spending more time in the labor force and less time on non-market household activities. The theme of the results is consistent across all specifications; women invest more time in production outside of the household. To examine the robustness of these findings, we report several adjustments to the base sample in Table 3. Throughout these checks, we focus on our primary outcomes of interest: hours worked in the past week and labor force participation in the past month.

Table 3 shows the results over the probability of working in Panel A and for hours worked in Panel B. In Columns (1) we restrict the sample to states that eventually passed the reform during the sample period (before 2016). The motivation behind this restriction is that states that did not adopt unilateral divorce laws may be different in unobservable ways that could bias the results. As a result, individuals in these states may not belong in the control group. Encouragingly, the restricted results are consistent with the baseline from Table 2. Women are more likely to be working (5.3 percentage points) and are working more hours (4 hours per week).

In Columns (2) to (8), we examine additional subsamples of interest. First, we remove Mexico City from the estimation sample. Mexico City is a more liberal state than the rest of Mexican states and was the first adopter of the unilateral no-fault legislation. Mexico City has also implemented unique reforms including rights for cohabitating couples through the *Ley de Sociedad de Convivencia* in 2006 and the decriminalization of abortion in 2007. These unobservable characteristics that are novel to Mexico City may affect households, especially if individuals are incentivized to cohabit rather than marry or have access to termination of unwanted pregnancies. To test whether Mexico City is influencing the results, Column (2) excludes Mexico City. Contrary to concern, the results without Mexico City are stronger than with the capital city.

Then, in Columns (3) and (4), we test whether urban or rural individuals behave differently than the full sample. The motivation behind the split is that women in rural areas may have fewer formal labor market opportunities. As expected, the effect disappears for rural women but remains for urban women. Then in Column (5), we limit the sample ages to 18-50. This 18-50 group may be more sensitive to the change in legislation than ages 51-60. As expected, the age restriction does increase the estimated effect. Next, to directly test whether women who have children under age five

Table 3: Robustness Checks on Married Women's Labor Supply

	PANEL A: WORKING									
	Early Adopters	No Mexico City	Urban	Rural	Ages 18-50	Child 0-5	Child Pre-Reform	Drop 5% Tails	Post x Shared	De Jure
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Uni x Post	-0.073*** (0.012)	-0.029 (0.034)	0.008 (0.038)	-0.040 (0.030)	-0.039 (0.026)	-0.062*** (0.021)	-0.036 (0.024)	-0.021 (0.022)	-0.052** (0.024)	-0.045 (0.028)
N	18,145	61,108	19,823	44,136	50,015	17,799	55,871	57,437	52,638	63,959
Mean Dep	0.46	0.46	0.42	0.48	0.48	0.41	0.46	0.46	0.46	0.46
Controls	X	X	X	X	X	X	X	X	X	X
State x Year Trend	X	X	X	X	X	X	X	X	X	X

	PANEL B: HOURS WORKED									
	Early Adopters	No Mexico City	Urban	Rural	Ages 18-50	Child 0-5	Child Pre-Reform	Drop 5% Tails	Post x Shared	De Jure
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Uni x Post	-2.475*** (0.451)	-1.433 (1.073)	-0.397 (1.490)	-1.395 (1.296)	-1.520 (0.937)	-2.996** (1.189)	-1.078 (0.831)	-0.703 (0.674)	-2.376** (1.134)	-1.832 (1.100)
N	18,145	61,108	19,823	44,136	50,015	17,799	55,871	57,437	52,638	63,959
Mean Dep	17.44	17.07	13.88	18.58	17.98	14.57	16.93	16.95	17.13	17.13
Controls	X	X	X	X	X	X	X	X	X	X
State x Year Trend	X	X	X	X	X	X	X	X	X	X

NOTES: Difference-in-difference estimation. Column (1) removes states not treated before 2017. Column (2) excludes Mexico City. Columns (3) and (4) split the sample into rural and urban areas. Column (5) excludes individuals in their 50s. Column (6) includes only individuals with children under age 5. Column (7) includes only individuals who had children before the reform passed (proxy for married pre-reform). Column (8) drops the bottom and top income tails. Column (9) interacts the indicator for post with the share of marriages in the municipality that established common property. Column (10) shows the results with *de jure* dates. Binary outcomes are estimated using a Probit and reported coefficients are average marginal effects. Women's hours worked estimated with a Tobit to account for censoring. The sample includes all married couples who are household heads or wives of the household heads. Individual controls include age, age-squared, indicators for education, urban-rural status, the number of children, an indicator for child under age five. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. We also include a dummy variable indicating state-level passage of the *Ley General de Acceso a Una Vida Libre de Violencia*. Robust standard errors are clustered at the state level and are reported in parentheses. ***, **, * represent statistical significance at 1, 5 and 10 percent levels.

SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016. Municipality-level variables from the INEGI divorce statistics.

respond differently than the base sample, Column (6) restricts the sample to women with children under age five. Women with younger children appear less responsive to the change in legislation. While the reform has the largest impact on individuals 18-50, those who have small children in the household do not change their labor supply.

Then, in Column (8), we drop the top and bottom five percent income tails. This exclusion tests whether high or low-income individuals are driving the results. The results appear similar in magnitude to the baseline. Finally, we examine whether the effect varies with the assignment of the property regime in the municipality. Unfortunately, we cannot observe the property division of the couple, but we can see municipal-level variation from the INEGI marriage statistics. We use the fraction of couples adopting shared property in their marriage interacted with the post indicator to see whether the division of assets affects the results. In Column (9), the results do not indicate that the effect varies by the property regime in the area.

Finally, in Column (10) we test the results across the *de jure* dates as an alternative to the observed *de facto* dates. As discussed in the data section, and shown in Table A1, the *de jure* versus the *de facto* reforms differ by at least one quarter for the majority of states in Mexico, with some states reporting dates that differ by more than a year. Due to these timing differences, we expect the *de jure* results to be distinct from the baseline *de facto*. Column (10) confirms this expectation. Labor supply shows no response to the legal change. The results suggest that the practice of no-fault divorce rather than the legal implementation is more important for household decisions.

Alternative Specifications

To directly check whether women are anticipating the law changes, we test how the effect varies over grouped years before and after the reform. Figure A4 plots the estimated coefficients from a regression that includes indicators over each period before and after the reform. These indicators replace the grouped post indicator in the baseline difference-in-difference analysis. The plotted coefficients in Figure A4 suggest that women adjust their labor force participation immediately following the change in divorce laws, over periods zero and one. The plotted estimates do not indicate that women anticipate reforms by increasing their work hours or probability of working in the years leading up to the reform. The coefficients also provide little evidence for a lagged effect, measured by years two through nine after the divorce legislation passed. The plotted points instead suggest that women react immediately to the reform in years zero and one.

We then test whether the finding vary across different groups within reform states by applying a difference-in-difference-in-differences approach. The setup is discussed in Section A1. We test whether the effect of the reform differs across three different groups (i) married versus cohabitating individuals, (ii) age of the youngest child, (iii) marital match quality. These results are shown in Table A8. First, we examine whether the effect differs across married women and women who are cohabitating with a partner. We find that the post-reform labor supply increases are limited to married women. Second, we test the impact by the age of the youngest child in the household.¹⁶ While women with young children have lower labor supply, the effect of the reform does not appear to vary by the age of the youngest child. Third, we examine whether the effect varies by marital match quality. In particular, we proxy marital match quality by whether married couples have different education levels or different literacy levels. We see no differential effects across lower quality couples.

¹⁶We use age groups (i) zero to two, (ii) three to five, and (iii) six to 18.

Potential Threats to Validity

In addition to the above robustness checks, we have considered additional potential threats to validity in the background of our analysis. First, [Garcia-Ramos \(2017\)](#) suggests that Baja California, Chiapas, and Quintana Roo reformed their divorce codes as late as 2004. As these states introduced unilateral divorce beginning 2014 or later, we do not expect these earlier reforms to influence either the pre-reform or post-reform time period considered. However, this example highlights that there were historical differences in the state-level requirements for divorce. To address these historical differences, our baseline specification implements state-level fixed effects and state-level time trends, which should control for past state-level differences.

A second concern is that competing policies that may have affected the labor supply of women. We have found evidence for competing policies at the federal level, but little evidence for such policies at the state level outside of Mexico City. The federal government passed an anti-discrimination act in 2003 and made additional changes to family leave policies. However, since these changes occurred at the national level, they should uniformly affect the treatment and control groups and not affect the measurement of state-level reforms.

A third threat to validity is the passage of *Ley General de Acceso a Una Vida Libre de Violencia* (General Law on Women's Access to a Life Free of Violence) in 2007, which attempted to reduce domestic violence against women, and each state had to adjust their Civil and Criminal Codes to accord with the national legislation ([Garcia-Ramos, 2017](#)). Adoption of this law took time to implement, and the state-level differences in timing have the potential to interfere with the passage of unilateral divorce. To address any concerns with the legislation, throughout the analysis, we control for the passage of the legislation with a dummy variable indicating adoption.¹⁷

6 Unilateral Divorce and Bargaining Power: A Structural Analysis

In this section, we analyze the causal relationship between the introduction of unilateral divorce laws on women's bargaining power within the household. As bargaining power is not observable, we set out a structural model of intrahousehold decision making to recover this parameter. We follow [Dunbar et al. \(2013\)](#) to identify the share

¹⁷Dates are from ([Garcia-Ramos, 2017](#))

of household resources controlled by women, which we will use to infer bargaining power. Section 6.1 presents a standard collective household model. We discuss how the model parameters are identified in Section 6.2. The estimation and results are provided in Sections 6.3 and 6.4, respectively.

6.1 Model

The model builds upon seminal work by Chiappori (1988, 1992); Apps and Rees (1988); Browning et al. (1994) and Browning and Chiappori (1998), and specifically on more recent work by Browning et al. (2013) and Dunbar et al. (2013) (DLP). The main alteration is that we emphasize the role of unilateral divorce in the household decision making process.

We model *nuclear* households, defined as households that consist of a married man (m) and woman (f) with up to three children (c). The adults are decision makers within the household and they bargain over how to allocate the household budget.¹⁸ Bargaining power within the household is a function of each spouse's outside option, and is therefore in part determined by their state's divorce laws. The goal of the model is to uncover how bargaining power changes as a result of these laws. To accomplish this, we identify how consumption goods are allocated within the household to determine which spouse "controls" more of the budget. This measure will serve as a proxy for bargaining power.¹⁹

Consistent with the Browning et al. (2013) formulation of the collective model, the household purchases a k -vector of goods z at market prices p . Individuals consume a k -vector of *private good equivalents* x of the household-level quantities, which are given by $z = Ax$. The k -by- k matrix A accounts for the sharing of goods within the household, and transforms what the household purchases into what individuals actually consume using Barten scales (Barten, 1964). The model, therefore, accounts for the allocation of public goods.

The man and woman each have their own utility function $U_j(x_j)$, $j \in \{m, f\}$. We

¹⁸Children do not participate in the bargaining process. Instead, children can be thought of as a public good from which both the mother and father derive utility.

¹⁹Browning et al. (2013) show that resource shares have a monotonic relationship with the Pareto weights, which determines each household member's bargaining power.

write the household's problem as follows:

$$\max_{x_m, x_f} \tilde{U}[U_m(x_m), U_f(x_f), p/y] = \mu_m(p/y, Uni)U_m + \mu_f(p/y, Uni)U_f$$

such that

$$y = z' p \text{ and } z = A[x_m + x_f]$$
(3)

where \tilde{U} exists by Pareto efficiency and μ_j are the Pareto weights. We denote the state divorce regime with the variable Uni , which enter's each spouses Pareto weight, and therefore has a direct effect on their bargaining power within the marriage.

Solving this program results in bundles of private good equivalents. Pricing these goods at within household shadow prices $A' p$ allows to calculate resource shares η_m , defined as the share of the total household budget controlled by the man. This includes consumption of private goods, public goods, and partially shared goods. It follows that $\eta_f = 1 - \eta_m$ of the household budget is controlled by the woman. As η_m increases, the husband has greater bargaining power, and therefore has more control of the budget.

Because the household is Pareto efficient, we can alternatively use duality theory to redefine the household's problem as a two stage process: In the first stage, resources are optimally allocated between the husband and wife. That is, the wife is allocated $\eta_m y$ and the husband $(1 - \eta_m)y$. In the second stage, each individual maximizes their own utility subject to their within household budget constraint which is determined by their share of household resources η_j and the shadow price vector $A' p$.²⁰

Resource shares are a function of observable household characteristics (suppressed for now) and also what are known in the literature as *distribution factors*. These are variables that affect each spouses relative bargaining power, but do not directly affect preferences for goods. Examples include the relative wages or age differences between spouses. In our context, we will classify unilateral divorce laws Uni as distribution factors. These laws will affect household decision making only through changes in the bargaining power of the spouses.

To identify resource shares, we rely on private assignable goods. A good is private if it is not shared. Examples of private assignable goods include food and clothing. A good is assignable if the econometrician can determine who in the household consumed the good. In our context, we can not determine food consumption for each

²⁰Pareto efficiency is a testable assumption. It has not been rejected in a variety of different settings: [Browning and Chiappori \(1998\)](#); [Bobonis \(2009\)](#); [Attanasio and Lechene \(2014\)](#); [Calvi \(2017\)](#); [Brown et al. \(2018\)](#). However, there are notable exceptions where Pareto efficiency is rejected. See, for example, [Udry \(1996\)](#).

individual household member, but we can assign clothing to men, women, and children. Food is therefore not assignable, whereas clothing is. Following DLP, we derive household-level demand functions for the private assignable goods. The key advantage of focusing on these goods is that the demand functions will only depend on the preferences and resource shares of a single household member.

DLP derive the following household-level budget share functions for the private assignable good k . Identification does not require price variation, so we use an Engel curve framework (budget share functions holding prices fixed):

$$\begin{aligned} W_m(y, Uni) &= \eta_m(y, Uni) \omega_m(\eta_m(y, Uni))y \\ W_f(y, Uni) &= (1 - \eta_m(y, Uni)) \omega_f((1 - \eta_m(y, Uni))y) \end{aligned} \quad (4)$$

where W_j is the budget share for good for men's or women's clothing, and ω is the individual-level demand function. The parameter of interest is η_j which serves as our measure of bargaining power. The challenge in identifying η_j is that for each Engel curve there are two unknowns functions: ω_j and η_j . That is, there are two reasons the household can spend little on women's clothing; (1) women may not like clothing, or (2) women may control a small share of the household budget. In what follows, we discuss how η_j can be identified by placing semi-parametric restrictions on clothing preferences.

6.2 Identification

We follow the DLP methodology of identifying resource shares using Engel curves for private assignable goods. We use assignable clothing for men and women. DLP impose two key identification assumptions. First, resource shares are assumed to be independent of household expenditure.²¹ Second, DLP restrict preferences to be similar in a limited way across people. We discuss the validity of these assumption as we move through identification.²²

We assume individual preferences follow a PIGLOG indirect utility function which takes the following form: $V(p, y) = e^{b(p)}[\ln y - a(p)]$.²³ By Roy's identify, we derive budget share equations that are linear in log expenditure. Holding prices fixed, this

²¹Menon et al. (2012) show the assumption to be quite reasonable. Moreover, this assumption only has to hold at low levels of expenditure.

²²Bargain et al. (2018) have tested several aspects of the collective model. The results provide empirical support for using clothing expenditures to infer how total resources are allocated.

²³More general functional forms are allowed, but for expositional reasons we focus on the simpler case. Moreover, this is the functional form we use in the empirical section.

results in the following Engel curves: $w(y)_j = \alpha_j + \beta_j \ln y$. Substituting this equation into Equation (4) results in a system of household-level Engel curves. We suppress observable heterogeneity for now for notational clarity:

$$\begin{aligned} W_m &= \eta_m [\alpha_m + \beta_m \ln(\eta_m) + \beta \ln y] \\ W_f &= (1 - \eta_m)[\alpha_f + \beta_f \ln(1 - \eta_m) + \beta \ln y] \end{aligned} \tag{5}$$

where α_j and β_j are clothing preference parameters.

As required by DLP, we impose the "Similar Across People" (SAP) restriction. This restricts the slope preference parameter for clothing β_j to not vary across people, that is, $\beta_m = \beta_f = \beta$. Intuitively, this assumption requires that for the man and woman, their marginal propensity to consume clothing is the same. This is an empirically testable assumption which we investigate in the robustness section. Recent work by [Dunbar et al. \(2017\)](#) and [Calvi \(2017\)](#) provide empirical support for this assumption.

Resource shares are identified by inverting these Engel curves and implicitly solving for η_m . In practice, the model is identified using an OLS-type regression of the household-level budget share W_j on log expenditure $\ln y$. This identifies the slope of the Engel curve $c_j = \eta_j \beta$. Then since resource shares sum to one, we have that $\sum_j c_j = \sum_j \eta_j \beta = \beta \sum_j \eta_j = \beta$. Solving for resource shares, we have $\eta_j = c_j / \beta$. While we impose that Engel curves are linear in log expenditure, more general functional forms are permissible for identification.²⁴

How are we inferring bargaining power from how clothing expenditures are allocated? The identification strategy can be understood as follows: If household expenditure increases, this change will affect household-level expenditure on both men's and women's clothing. If we see that men's clothing budget shares increased by more than the increase in women's clothing budget shares, we infer from that that the man in the household *controlled* more of that additional household expenditure. Placing this intuition within a structural model with utility maximization is what identifies resource shares, and ultimately bargaining power. It is important to note that the relative magnitude of clothing budget shares does not determine the relative magnitude of resource shares. It is entirely possible for women to consume more clothing, but still control a smaller share of the budget. The distinction between budget shares W_j and resource shares η_j is because preferences for clothing are allowed to be different.

²⁴Identification works best when the Engel curves have nonzero slope as discussed in [Tommasi and Wolf \(2018\)](#), which is satisfied in our context.

6.3 Estimation

As discussed earlier, we use five waves for the National Household Income and Expenditures Survey (ENIGH) spanning the years 2008 to 2016. The key data requirements necessary for the structural model are household-level expenditure on a private assignable good (clothing) for both men and women. The ENIGH also includes detailed demographic information about the household. In the estimation, we separate households by those with children and those without, because household behavior may be systematically different across these household compositions. We therefore provide summary statistics for these two samples in Table A6. In estimating the structural model, we account for observable heterogeneity in education, age, employment, and whether the household is located in an urban or rural area.

We select a subsample of nuclear households, where a nuclear consists of a married couple with zero to three children. We therefore exclude a significant percentage of households that have multiple adult men or women. The reason for this exclusion is that it facilitates our interpretation of female bargaining power; since we only observe women's clothing, but not individual-level clothing, we can only identify total women's resource shares. Having multiple women in the household would complicate our interpretation of women's bargaining power. We drop households in the top or bottom percentile of total household expenditure in each wave to eliminate outliers, as well as households with men or women over age 60.²⁵ Lastly, we exclude households with missing values for any of our covariates.

We first add an error term to the Engel curves given in Equation (8).

$$\begin{aligned} W_m &= \eta_m [\alpha_m + \beta_m \ln(\eta_m) + \beta \ln y] + \epsilon_m \\ W_f &= (1 - \eta_m)[\alpha_f + \beta_f \ln(1 - \eta_m) + \beta \ln y] + \epsilon_f \end{aligned} \tag{6}$$

Since expenditure is likely endogenous due to measurement error or unobservable preference heterogeneity (see, for example, Lewbel (1996)) we use income as an exogenous instrument. The model is estimated via Hansen (1982)'s Generalized Method of Moments.²⁶ Let q_j be an $L \times 1$ vector of instruments. Then $E(\epsilon_j q_j) = 0$ for

²⁵One reason to focus on households in this age range is because our model is static. The behavior of couples may change at retirement, and for simplicity, we avoid developing a dynamic model that accounts for these changes.

²⁶Past work that has employed the DLP method has estimated the model using nonlinear Seemingly Unrelated Regression (for example, DLP; Calvi (2017); Penglase (2018)). While that approach is more efficient, it does not account for endogeneity in total expenditure. Moreover, we find several important differences in certain parameter estimates that lead us to use GMM instead.

all j, l . The moments can be written as follows:

$$\begin{aligned} E[(W_m - \eta_m [\alpha_m + \beta_m \ln(\eta_m) + \beta \ln y]) q_{ml}] &= 0 \\ E[(W_f - (1 - \eta_m)[\alpha_f + \beta_f \ln(1 - \eta_m) + \beta \ln y]) q_{wl}] &= 0 \end{aligned} \tag{7}$$

For instruments, we interact our vector of household demographic characteristics X_j , log income, and log expenditure with X_j .

Divorce Laws and Bargaining Power. We introduce observable heterogeneity by allowing each parameter to be a function of household characteristics. This includes demographic characteristics such as the age and education of each household member, but also state and year fixed effects. Moreover, we allow resource shares to depend on the divorce law regime in the household's state of residence. For $j \in \{m, f\}$:

$$\begin{aligned} \eta_j &= \delta^{\eta_j} X_i + \gamma_t^{\eta_j} + \psi_s^{\eta_j} + \phi Uni_s \times Post_t \\ \alpha_j &= \delta^{\alpha_j} X_i + \gamma_t^{\alpha_j} + \psi_s^{\alpha_j} \\ \beta &= \delta^\beta X_i + \gamma_t^\beta \end{aligned} \tag{8}$$

where X_i is a vector of household demographic characteristics, γ_t are year fixed effects, ψ_s are a vector of state fixed effects, and $Uni_s \times Post_t$ is an indicator for whether state s in year t allows unilateral divorce. We assume the divorce regime only affects the household demand for assignable clothing through its affect on resource shares, that is, Uni is a distribution factor and therefore does not enter either clothing preference parameter α_j or β . Divorce laws have previously been used in the literature as a distribution factor (Chiappori et al., 2002). Lastly, note that β does not vary across person types j as required by the DLP identification method.

With the panel structure of the data, we are then estimating a difference-in-difference specification within the structural model of intra-household resource allocation. The spirit of this identification strategy is to combine the best features of reduced-form and structural techniques, as discussed in Lewbel (2018). In effect, we estimate a structural system of Engel curves to identify resource shares which are linear in household characteristics. Then within the resource share function, we use a difference-in-difference model with the structural parameter as the outcome of interest.

6.4 Results

Table 4 presents the effect of the introduction of unilateral divorce on women's resource shares. The parameter of interest is $Uni \times Post$ which can be interpreted as

the difference-in-difference estimate of the implementation of unilateral divorce on women's bargaining power within the household. This parameter originates from Equation (8) which is estimated within System (7). For the main results, we limit the sample to married couples with zero to three children. These results are presented in Columns (1) and (2). We find a small decline in women's bargaining power: The preferred results, given in Column (2), suggest that unilateral divorce decreased women's control of the household budget by 1.1 percentage points, though this result is only marginally significant and moreover, the magnitude of this change is quite small.

We estimate the model using several alternative samples to analyze the robustness of this results. Since couples with, and without children may differ in unobservable ways (that we cannot account for), we estimate the model separately for those two samples. The results are similar in magnitude and significance for couples with children, but we find no change in bargaining power for married women without children. These results are presented in Columns (3) and (4). We next restrict the sample to households that reside in states that adopted unilateral divorce prior to 2014, and rely solely on variation in the timing of the laws adoption. These state may be different in unobservable ways relative to the states that have more recently adopted unilateral divorce. The results again are close to zero in magnitude.

We attribute this negligible effect to three reasons. First, our estimation may not be able to disentangle the relationship between unilateral divorce, labor supply and bargaining power. Unilateral divorce may cause women's bargaining power to decline, but if this in turn causes women to work more, that may offset the decline in bargaining power. Second, the marital property regime (community or separate) varies across marriages and his likely highly correlated with which spouse benefits from the reforms. Because we do not know the property regime, we are unable to account for it. Lastly, we see a sharp increase in divorce rates. This suggests that couples may not be renegotiating the household allocation, but rather simply divorcing. We discuss these reasons in more detail in Section 7.

Several of the demographic characteristics are interesting on their own. These results are presented in Table A7 in the Appendix. Aside from households without children, female employment is strongly associated with higher female bargaining power. Using the full-sample estimates (Column 1), we see that women who work control 3.6 percentage points more than women who do not. Our full-sample estimates also suggest that higher education for women is associated with greater bargaining power.

Lastly, we present summary statistics of the predicted resource shares in Table 5 (we do so separately for couples with and without children). The empirical distri-

Table 4: Effect of Unilateral Divorce on Women's Bargaining Power

	MAIN RESULTS		ALTERNATIVE SAMPLES			
			All States		Early Adopters	
	All Couples		With Children	Without Children	With Children	Without Children
	(1)	(2)	(3)	(4)	(5)	(6)
Uni × Post	-0.009 (0.006)	-0.011* (0.006)	-0.012* (0.007)	-0.028 (0.028)	0.001 (0.015)	0.014 (0.029)
N	31,305	31,305	26,457	4,848	7,271	1,342
Region FE	X			X		X
State FE		X	X		X	
Year FE	X	X	X	X	X	X

NOTES: * p<0.1, ** p<0.05, *** p<0.01. The main results in Columns (1) and (2) include all households with 1 married couple, and 0 to 3 children. In Columns (3) and (4) we estimate the model separately for couples with and without children. In Columns (5-6) we limit the sample to states that adopted unilateral divorce prior to 2014. Robust standard errors in parentheses. Controls include the age and education of the husband and wife, the number of children, average child age, proportion of female children, and whether the household resides in an urban area. SOURCE: National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016.

Table 5: Predicted Resource Shares

			Mean	Median	Std. Dev.	Min.	Max.	Obs.
Married Couples with One to Three Children	Women	0.519	0.523	0.081	0.208	0.797	26,457	
	Men	0.481	0.477	0.081	0.203	0.792		
Married Couples with No Children	Women	0.477	0.482	0.098	0.115	0.796	4,848	
	Men	0.523	0.518	0.098	0.204	0.885		

NOTES: Descriptive statistics for the predicted resource shares across the estimation sample.

SOURCE: National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016.

butions of the resource share estimates are provided in Figure A3 in the Appendix. Bargaining power is largely equal across household compositions with women controlling a slightly smaller share of the household budget at 51.9 percent in married couples with one to three children. Recall that these measures have a one-to-one relationship with the Pareto weights. Results are similar for couples without children. These figures are slightly higher than previous estimates in the Mexican context which find women control slightly less than half of the budget (Tommasi, 2018). However, these results use data from the late 1990s and early 2000s, and we believe it's likely women's empowerment has improved in recent years.

The above results suggest the introduction of unilateral divorce had a small, near-negligible effect on women's bargaining power within the household. In the next section, we reconcile these results with our labor supply results and also discuss potential reasons for the lack of a large effect of these laws on women's bargaining power within the household.

7 Discussion

Our results in Section 5 suggest that the introduction of unilateral divorce laws resulted in married women with children increasing the labor supply. How do these results reconcile with what we find in our structural analyses? In this section, we first discuss the relationship between our labor supply and women's bargaining power results. We then discuss how property rights within the marriage may interact with divorce laws, and how this relationship could confound our analysis.

7.1 Labor Supply and Women's Bargaining Power

One complication that arises in the interpretation of our results is that working, in and of itself, increases female bargaining power ([Anderson and Eswaran \(2009\)](#); [Atkin \(2009\)](#)). That is, women may work more because of a decline in bargaining power, but the higher wage income relative to their husbands may offset some of this decline. A natural solution to this problem is to model labor supply in addition to consumption allocations as a way of inferring women's bargaining power. We would study both how consumption goods and leisure is allocated to estimate changes in bargaining power as a result of the divorce laws. [Lise and Seitz \(2011\)](#) conduct an analysis along these lines. However, there are several complications that prevent us from taking this route. First, [Lise and Seitz \(2011\)](#) focus only on childless married couples who both are employed in market work. This population is not common in Mexico as women often work, but not in the formal sector with observable wages. Moreover, modeling household production would involve strong assumptions about household production functions. Incorporating household production into a model of intrahousehold consumer demand is beyond the scope of this paper. While not entirely satisfying, we refrain from complicating our model, and instead choose a simpler formulation that may fail to entirely capture our desired outcomes of interest.

We modify our main structural specification slightly to examine the relationship between labor supply and women's bargaining power. To do this, we include an indicator for employment in the women's resource share function.²⁷ The results are provided in Columns (4-6) in Table [A7](#). We see that married women with children who work control 4.4 percentages points more of the household budget. A positive association between labor supply and bargaining power is unsurprising and consistent with the above discussion. Moreover, we see a slightly more statistically significant decline in women's bargaining power as a result of unilateral divorce, suggesting that increased labor supply is offsetting a decline in women's bargaining power.

7.2 Property Division and Unilateral Divorce Laws

In Mexico, couples choose how property is divided at the time of marriage. The couple can decide to operate under a *communal* property regime, in which case all assets are shared by both spouses (56.9 percent of marriages). Alternatively, the couple could decide on a *separate* property regime, where each spouse individually owns

²⁷We leave employment out of the main specification as it is a collider or "bad" control variable.

certain assets (26.5 percent of marriages).²⁸

The impact of no-fault unilateral divorce laws on women's bargaining power may depend on the divorce property regime. From the perspective of Nash bargaining, spouses who have a better outside option have a higher threat point, and therefore a better bargaining position within the marriage. The introduction of no-fault unilateral divorce interacts with the divorce property regime in such a way that significantly alters each spouses outside option.²⁹

To illustrate this point, consider two married couples that both consist of an employed husband, and a wife who does not do market work. Suppose the first couple is living under a communal property regime and the second under a separate property regime, but are otherwise identical. Does the introduction of no-fault unilateral divorce affect both couples in the same way? The answer is no. For the married couple living under a communal property regime, the wife benefits from the law change more so than the husband. She can make a credible threat to file for divorce and take a large share of the property for herself. Her bargaining power should therefore increase. For the married couple with separate assets, the introduction of no-fault divorce will benefit the husband, as he is employed and presumably has a better outside option. His bargaining power should increase.

These competing effects may cancel each other out, resulting in no change *on average* in the estimation sample. Because we do not observe the property rights within the marriage, we are unable to account for this type of heterogeneity directly. Moreover, there are no state-level laws that govern marital property that would allow us to conduct an analysis similar to Gray (1998), Stevenson (2008), or Voena (2015). Nonetheless, we do observe municipality-level aggregates of marital property regimes in the ENIGI survey as discussed earlier. We interact our treatment variable with the proportion of marriages in the municipality that choose a shared property regime, but find no difference. These results are available upon request.

²⁸The remaining marriages are unaware of what they decided.

²⁹The importance of property rights in understanding the consequences of divorce laws has been studied most notably by Gray (1998) and Voena (2015). Both studies highlight the need to account how marital property is divided should the couple divorce in understanding the impact of no-fault divorce on labor supply, savings, and bargaining power. Stevenson (2008), however, finds evidence that the effect of unilateral divorce on women's labor supply does *not* depend on the property regime.

8 Conclusion

This paper analyzes the consequences of unilateral divorce laws in Mexico. We demonstrate that women who resided in states that legalized unilateral divorce increased their labor supply at both the intensive and extensive margins. This result is consistent with the existing literature and suggests that women entered the labor market to help insure themselves against divorce. We then investigate the underlying mechanisms. To do so, we use a structural model of intra-household resource allocation to identify changes in bargaining power as a result of unilateral divorce laws. Our findings indicate a small decline in women's bargaining power on average, though these results are not large or robust to alternative specifications. There are several potential reasons for the lack of a substantial effect that motivate future research. First, the relationship between labor supply decisions and bargaining power is difficult to disentangle within this context and may need to be jointly modeled. Second, property rights are integral in determining which spouse benefits from divorce. Property rights are a vital source of heterogeneity that we are unable to account for in this paper.

Our results highlight the importance of understanding intra-household dynamics when studying the consequences of public policy. Unilateral divorce laws are present in at least nine countries and seem destined to proceed to spread. The introduction of this legislation impacts all aspects of marriage: who gets married, how married couples behave, and which couples get divorced. Moreover, unilateral divorce may have different effects in low and middle-income countries where women at times have a lower standing in society, and there are fewer social protections for vulnerable individuals. It is, therefore, necessary to empirically study the welfare effects of these laws as we do in this study.

There are several directions for future work in this context. First, we ignore extended family households, which are prevalent across Mexico. Understanding the interaction between spouses in these types of households is relevant to the entire collective household literature, and extends to this context as well. Second, our model is static, and there are undoubtedly dynamic elements to the decision to get divorced, most obviously the possibility of remarriage. Third, there are several data limitations unique to the ENIGH and limit our interpretation of the results. The ENIGH does not provide marital length, which limits our ability to subset the results into different groups such as newly married couples or established couples. We also do not have a prolonged time span following the reform, which limits our ability to examine whether individuals change their fertility decisions after the reform. Future work could consider the differential effects by marital length as well as whether divorce

laws affect women's childbearing choices. Finally, further research is necessary to incorporate alimony and child custody laws into the analysis.

References

- Anderson, Siwan and Mukesh Eswaran**, "What Determines Female Autonomy? Evidence from Bangladesh," *Journal of Development Economics*, 2009, 90 (2), 179–191.
- Apps, Patricia F and Ray Rees**, "Taxation and the Household," *Journal of Public Economics*, 1988, 35 (3), 355–369.
- Atkin, David**, "Working for the Future: Female Factory Work and Child Health in Mexico," *Unpublished Manuscript, Yale University*, 2009.
- Attanasio, Orazio P and Valérie Lechene**, "Efficient Responses to Targeted Cash Transfers," *Journal of Political Economy*, 2014, 122 (1), 178–222.
- Bargain, Olivier, Guy Lacroix, and Luca Tiberti**, "Validating the Collective Model of Household Consumption Using Direct Evidence on Sharing," *Unpublished Manuscript*, 2018.
- , **Libertad González, Claire Keane, and Berkay Özcan**, "Female Labor Supply and Divorce: New Evidence from Ireland," *European Economic Review*, 2012, 56 (8), 1675–1691.
- , **Olivier Donni, and Prudence Kwenda**, "Intrahousehold Distribution and Poverty: Evidence from Cote d'Ivoire," *Journal of Development Economics*, 2014, 107, 262–276.
- Barten, Antonius Petrus**, "Family Composition, Prices and Expenditure Patterns," 1964.
- Becker, Gary S**, *A Treatise on the Family*, Harvard University Press, Cambridge, 1993.
- Bobonis, Gustavo J**, "Is the Allocation of Resources within the Household Efficient? New Evidence from a Randomized Experiment," *Journal of Political Economy*, 2009, 117 (3), 453–503.
- Bremmer, Dale and Randy Kesselring**, "Divorce and Female Labor Force Participation: Evidence from Times-Series Data and Cointegration," *Atlantic Economic Journal*, 2004, 32 (3), 175–190.
- Brown, Caitlin, Rossella Calvi, and Jacob Penglase**, "Sharing the Pie: Undernutrition, Intra-Household Allocation, and Poverty," *Unpublished Manuscript*, 2018.
- Browning, Martin and Pierre-Andre Chiappori**, "Efficient Intra-household Allocations: A General Characterization and Empirical Tests," *Econometrica*, 1998, pp. 1241–1278.
- , **Francois Bourguignon, Pierre-Andre Chiappori, and Valerie Lechene**, "Income and Outcomes: A Structural Model of Intrahousehold Allocation," *Journal of Political Economy*, 1994, 102 (6), 1067–1096.
- , **Pierre-Andre Chiappori, and Arthur Lewbel**, "Estimating Consumption Economies of Scale, Adult Equivalence Scales, and Household Bargaining Power," *The Review of Economic Studies*, 2013, 80 (4), 1267–1303.
- Calvi, Rossella**, "Why Are Older Women Missing in India? The Age Profile of Bargaining Power and Poverty," *Unpublished Manuscript*, 2017.
- , **Arthur Lewbel, and Denni Tommasi**, "LATE with Mismeasured or Misspecified Treatment: An Application to Women's Empowerment in India," Working Papers ECARES 2017-27, ULB – Universite Libre de Bruxelles June 2017.

- Chiappori, Pierre-André**, "Rational Household Labor Supply," *Econometrica*, 1988, pp. 63–90.
- , "Collective Labor Supply and Welfare," *Journal of Political Economy*, 1992, pp. 437–467.
- Chiappori, Pierre-André, Bernard Fortin, and Guy Lacroix**, "Marriage Market, Divorce Legislation, and Household Labor Supply," *Journal of Political Economy*, 2002, 110 (1), 37–72.
- , **Murat Iyigun, and Yoram Weiss**, "The Becker–Coase Theorem Reconsidered," *Journal of Demographic Economics*, 2015, 81 (2), 157–177.
- Dunbar, Geoffrey R, Arthur Lewbel, and Krishna Pendakur**, "Children's Resources in Collective Households: Identification, Estimation, and an Application to Child Poverty in Malawi," *American Economic Review*, 2013, 103 (1), 438–471.
- , —, and —, *Identification of Random Resource Shares in Collective Households Without Preference Similarity Restrictions*, Bank of Canada, 2017.
- Eckstein, Zvi, Michael Keane, and Osnat Lifshitz**, "Career and Family Decisions: Cohorts Born 1935–1975," *Econometrica*, 2019, 87 (1), 217–253.
- Fernández, Raquel and Joyce Wong**, "Unilateral Divorce, the Decreasing Gender Gap, and Married Women's Labor Force Participation," *American Economic Review*, 2014, 104 (5), 342–47.
- Friedberg, Leora**, "Did Unilateral Divorce Raise Divorce Rates? Evidence from Panel Data," Technical Report, National Bureau of Economic Research 1998.
- García-Ramos, Aixa**, "Divorce laws and intimate partner violence: Evidence from Mexico," *Unpublished Manuscript*, 2017.
- Genadek, Katie R, Wendy A Stock, and Christiana Stoddard**, "No-fault Divorce Laws and the Labor Supply of Women with and without Children," *Journal of Human Resources*, 2007, 42 (1), 247–274.
- González, Libertad and Tarja K Viitanen**, "The Effect of Divorce Laws on Divorce Rates in Europe," *European Economic Review*, 2009, 53 (2), 127–138.
- Gray, Jeffrey S**, "Divorce-Law Changes, Household Bargaining, and Married Women's Labor Supply," *The American Economic Review*, 1998, 88 (3), 628–642.
- Hansen, Lars Peter**, "Large Sample Properties of Generalized Method of Moments Estimators," *Econometrica: Journal of the Econometric Society*, 1982, pp. 1029–1054.
- Hassani-Nezhad, Lena and Anna Sjögren**, "Unilateral Divorce for Women and Labor Supply in the Middle East and North Africa: the Effect of Khul Reform," *Feminist Economics*, 2014, 20 (4), 113–137.
- Heath, Rachel and Xu Tan**, "Intrahousehold Bargaining, Female Autonomy, and Labor Supply: Theory and Evidence from India," *University of Washington*, 2014.
- Hoehn-Velasco, Lauren and Jacob Penglase**, "Divorce in Mexico: The Impact of No-Fault Unilateral Divorce Laws," *Unpublished Manuscript*, 2018.
- Kneip, Thorsten and Gerrit Bauer**, "Did Unilateral Divorce Laws Raise Divorce Rates in Western Europe?," *Journal of Marriage and Family*, 2009, 71 (3), 592–607.

Lagoutte, S., A. Bengaly, B. Youra, T. Fall, and Danish Institute for Human Rights, *Dissolution of Marriage, Legal Pluralism and Women's Rights in Francophone West Africa*, Danish Institute for Human Rights, 2014.

Lambert, Sylvie, Dominique Van de Walle, and Paola Villar, *Marital Trajectories and Women's Well-being in Senegal*, The World Bank, 2017.

Lew, Nellie and Trinidad Beleche, "Til Laws Do Us Part? The Impact of Changing Divorce Laws on Divorce Rates in Mexico," Technical Report, Working paper. Recuperado el día 15 de enero de 2011 de: <http://74.125.155.132/scholar> 2008.

Lewbel, Arthur, "Demand Estimation with Expenditure Measurement Errors on the Left and Right Hand Side," *Review of Economics and Statistics*, 1996, pp. 718–725.

— , "The Identification Zoo-Meanings of Identification in Econometrics," *Journal of Economic Literature*, 2018, 7.

Lise, Jeremy and Shannon Seitz, "Consumption Inequality and Intra-Household Allocations," *The Review of Economic Studies*, 2011, 78 (1), 328–355.

Mendez-Sanchez, Allan Alberto, "El Divorcio Incausado en Mexico," *Unpublished Manuscript*, Universidad Iberoamericana, 2014.

Menon, Martina, Krishna Pendakur, and Federico Perali, "On the Expenditure-Dependence of Children's Resource Shares," *Economics Letters*, 2012, 117 (3), 739–742.

Parkman, Allen M, "Unilateral Divorce and the Labor-Force Participation Rate of Married Women, Revisited," *American Economic Review*, 1992, 92 (3), 671–678.

Penglase, Jacob, "Consumption Inequality among Children: Evidence from Child Fostering in Malawi," *Unpublished Manuscript*, 2018.

Peters, H Elizabeth, "Marriage and Divorce: Informational Constraints and Private Contracting," *American Economic Review*, 1986, 76 (3), 437–454.

Rangel, Marcos A, "Alimony Rights and Intrahousehold Allocation of Resources: Evidence from Brazil," *The Economic Journal*, 2006, 116 (513), 627–658.

Roff, Jennifer, "Cleaning in the Shadow of the Law? Bargaining, Marital Investment, and the Impact of Divorce Law on Husbands? Intrahousehold Work," *The Journal of Law and Economics*, 2017, 60 (1), 115–134.

Sokullu, Senay and Christine Valente, "Individual Consumption in Collective Households: Identification Using Panel Data with an Application to PROGRESA," *Unpublished Manuscript*, 2018.

Stevenson, Betsey, "The Impact of Divorce Laws on Marriage-Specific Capital," *Journal of Labor Economics*, 2007, 25 (1), 75–94.

— , "Divorce Law and Women's Labor Supply," *Journal of Empirical Legal Studies*, 2008, 5 (4), 853–873.

— and Justin Wolfers, "Bargaining in the Shadow of the Law: Divorce Laws and Family Distress," *The Quarterly Journal of Economics*, 2006, 121 (1), 267–288.

Tobin, James, "Estimation of Relationships for Limited Dependent Variables," *Econometrica*, 1958, pp. 24–36.

Tommasi, Denni, "Control of Resources, Bargaining Power and the Demand for Food: Evidence from PROGRESA," *Unpublished Manuscript*, 2018.

— **and Alexander Wolf**, "Estimating Household Resource Shares: A Shrinkage Approach," *Economics Letters*, 2018, 163, 75 – 78.

Udry, Christopher, "Gender, Agricultural Production, and the Theory of the Household," *Journal of Political Economy*, 1996, 104 (5), 1010–1046.

Voena, Alessandra, "Yours, Mine, and Ours: Do Divorce Laws Affect the Intertemporal Behavior of Married Couples?," *American Economic Review*, 2015, 105 (8), 2295–2332.

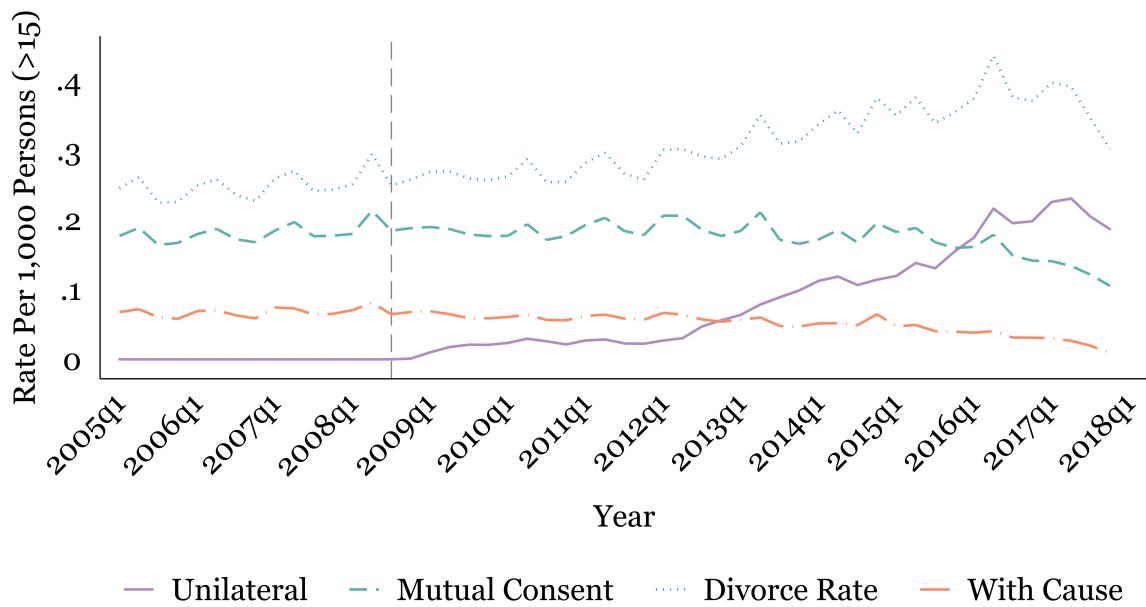
Weitzman, Lenore J, *The Divorce Revolution: The Unexpected Social and Economic Consequences for Women and Children in America*, New York New York The Free Press 1985., 1985.

— **and Ruth B Dixon**, "The Alimony Myth: Does No-Fault Divorce Make a Difference," *Fam. LQ*, 1980, 14, 141.

Wolfers, Justin, "Did unilateral divorce laws raise divorce rates? A reconciliation and new results," *American Economic Review*, 2006, 96 (5), 1802–1820.

A Additional Figures

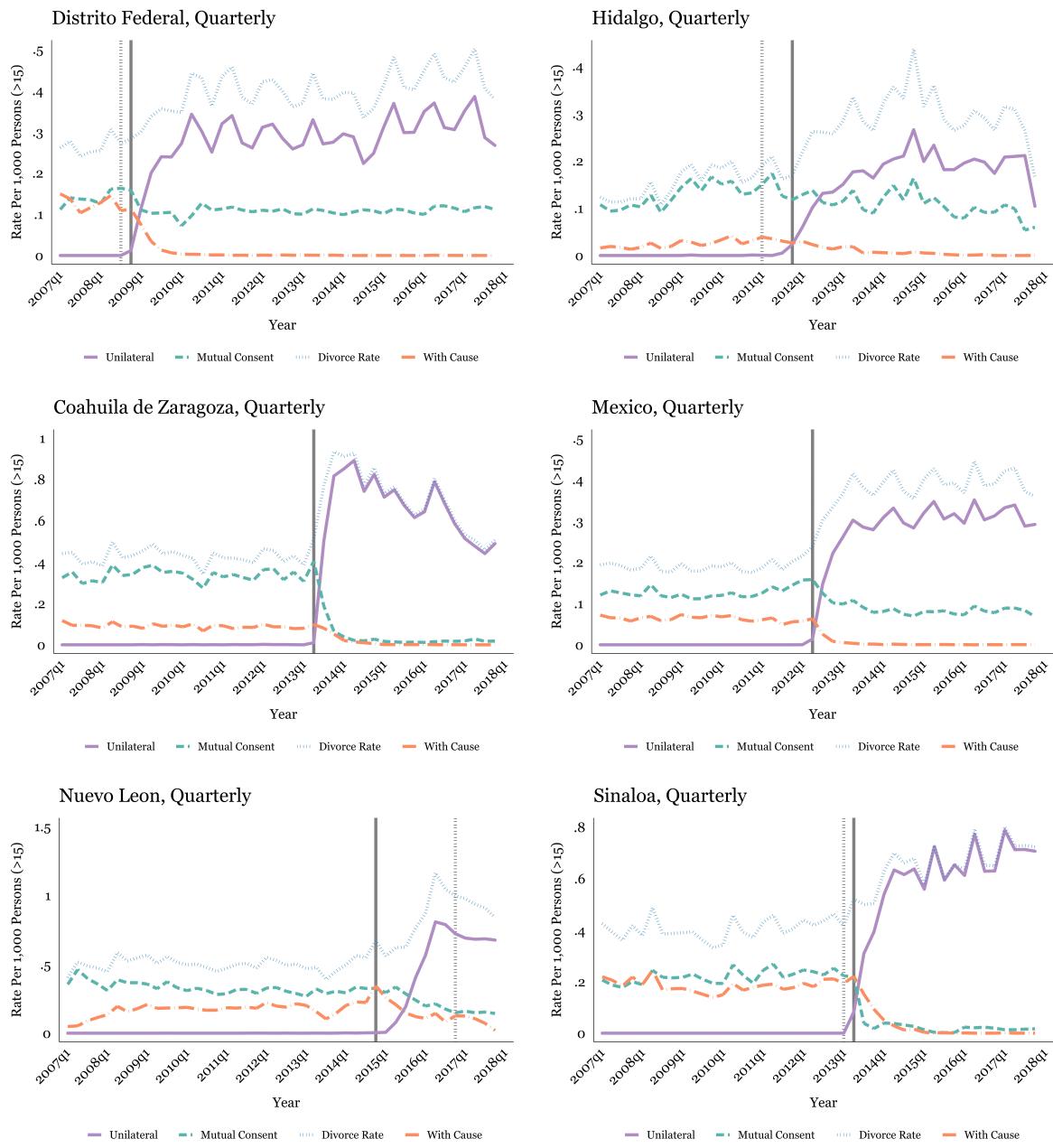
Figure A1: Divorce Rate in Mexico



NOTES: The divorce rate is reported per 1,000 persons over age 15.

SOURCE: Municipality-level variables from the INEGI divorce statistics.

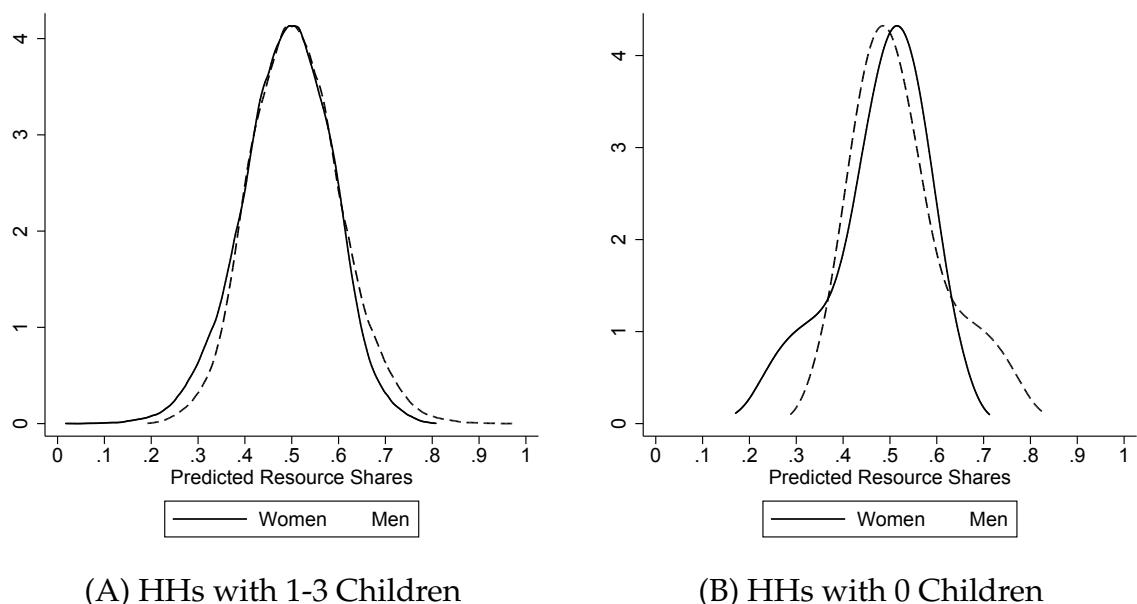
Figure A2: Divorce Rate by Type in Select States



NOTES: The divorce rate is reported per 1,000 persons over age 15. The vertical lines indicate the *de jure* law with the dotted line and the *de facto* reform with the solid line.

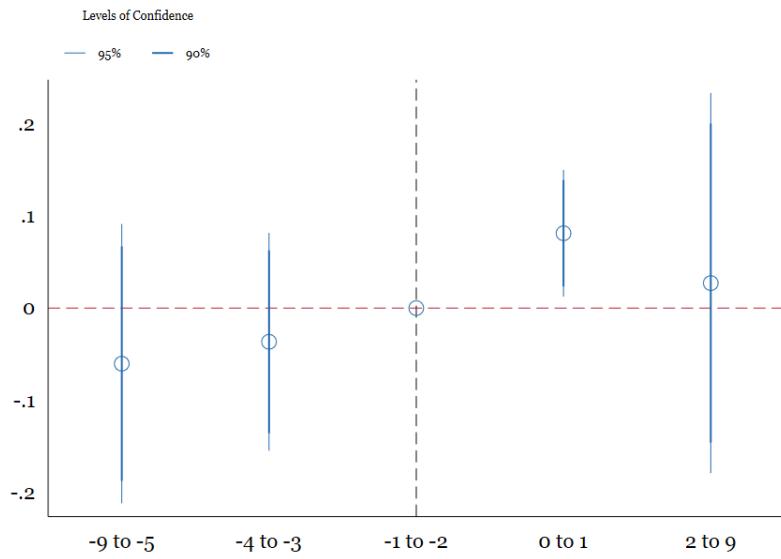
SOURCE: Municipality-level variables from the INEGI divorce statistics.

Figure A3: Empirical Distributions of Estimated Resource Shares

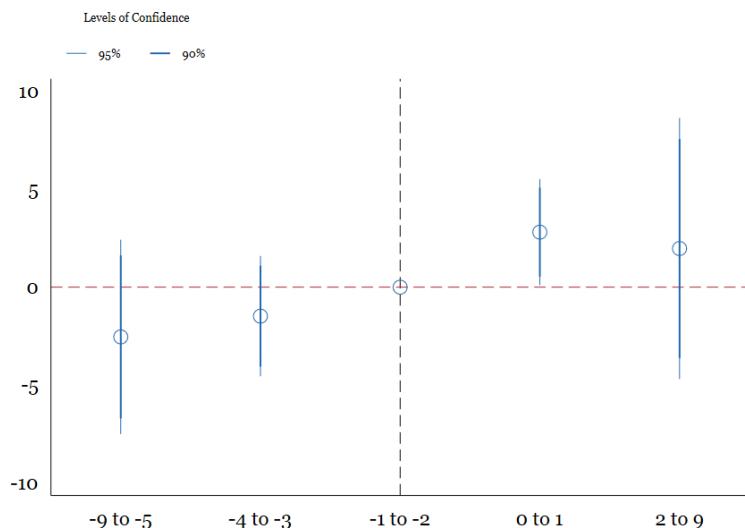


NOTES: GMM estimates. SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016.

Figure A4: Unilateral Divorce Reform and Married Women's Labor Supply
 PANEL A: 1(WORKING)



PANEL B: WORK HOURS



NOTES: Plotted points represent the coefficients from a single regression that includes indicators for each period pre and post reform. The excluded period is the period just before the reform (periods -1 and -2). Binary outcomes are estimated using a Probit and reported coefficients are average marginal effects. Women's hours worked estimated with a Tobit to account for censoring. The sample includes all married couples who are household heads or wives of the household heads. Individual controls include age, age-squared, indicators for education, urban-rural status, the number of children, an indicator for child under age five. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. We also include a dummy variable indicating state-level passage of the *Ley General de Acceso a Una Vida Libre de Violencia*. Robust standard errors are clustered at the state level and are reported in parentheses. ***, **, * represent statistical significance at 1, 5 and 10 percent levels.
 SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016. Municipality-level variables from the INEGI divorce statistics.

B Additional Tables

Table A1: Unilateral Divorce Legislation Year and State, 2008-2017

Region	State	De Facto Year	De Jure Year	Legal Code (Family v. Civil)	Divorce Articles (#)
Central	Mexico City	2008	2008	Civil	266, 267, 272
	Guanajuato	2015		Civil	328, 323, 329
	Hidalgo	2011	2011	Family	102, 103
	Mexico	2012	2012	Civil	4.89, 4.91, 4.191, 4.102, 4.105
	Morelos	2016	2016	Family	174, 175
	Puebla	2016	2016	Civil	442 - 453
	Queretaro	2015	2016	Civil	246, 249, 252, 253
	Tlaxcala	2016	2016	Civil	123, 125
North	Aguascalientes	2015	2015	Civil	288, 289, 294, 295, 296, 298
	Baja California	2016		Civil	264, 269, 271
	Baja California Sur	2017	2017	Civil	305, 273, 277, 278, 279, 284, 288, 289
	Coahuila	2013	2013	Civil	362, 363, 369, 374
	Chihuahua	2016		Civil	255, 256
	Durango	2016		Civil	261-286
	Nuevo Leon	2014	2016	Civil	267, 272, 274
	San Luis Potosi	2016	2017	Family	86, 87
	Sinaloa	2013	2013	Family	181, 182, 184
	Sonora	2015	2015	Family	141-156
	Tamaulipas	2014	2015	Civil	248, 249, 253
	Zacatecas	2017	2017	Family	214, 215, 223, 224, 231
West	Colima	2016	2016	Civil	267, 268, 272, 273, 278
	Jalisco	2016	2018	Civil	404, 405
	Michoacan	2016	2015	Family	253- 258
	Nayarit	2015	2015	Civil	221, 260, 261, 263, 265
South-East	Campeche	2014		Civil	281, 282, 283, 284, 287
	Chiapas	2014		Civil	263, 268, 269, 270
	Guerrero	2012	2012	Ley de Divorcio	4, 11, 12, 13, 16, 17, 27, 28, 44
	Oaxaca	2017	2017	Civil	278, 279, 284, 285
	Quintana Roo	2014	2013	Civil	798, 799, 800, 801, 804, 805
	Tabasco	2015		Civil	257, 258, 267, 268, 269, 272
	Veracruz	2015	2015	Civil	141, 146, 147, 148, 150
	Yucatan	2013	2013	Family	191, 192

KEY: Blue indicates conflict between the *de facto* and *de jure* years. There are additional states including Guerrero, Hidalgo, Morelos, Oaxaca, Sonora, Veracruz, and Yucatan, where the quarters differ by more than a single quarter between *de facto* and *de jure* practices.

NOTES: When the sources conflict, for our baseline analysis, we default to the *de facto* quarter-year combination where the number of unilateral divorces sentenced exceeds ten (see INEGI). Based on our research, states with blank years had not passed unilateral divorce *as of 2017*.

SOURCES: Author's combination of the sources including: (i) family and civil codes of each state, (ii) popular press articles, (iii) Garcia-Ramos (2017), (iv) Mendez-Sachez (2014), and (v) Municipality-level variables from the INEGI divorce statistics.

Table A2: Unilateral Divorce Reform and Share of Time Spent on Work, Household, and Leisure

Share of Time:	WOMEN			MEN		
	Working (1)	Household (2)	Leisure (3)	Working (4)	Household (5)	Leisure (6)
Uni x Post	-0.016 (0.017)	-0.007 (0.011)	0.022** (0.009)	-0.037** (0.015)	0.011* (0.006)	0.025* (0.014)
N	62,516	61,851	62,216	59,614	59,092	59,305
Mean Dep	0.23	0.55	0.23	0.68	0.13	0.19
Controls	X	X	X	X	X	X
State x Year Trend	X	X	X	X	X	X

NOTES: Difference-in-difference estimation. OLS coefficients are reported for continuous variables. Columns (1)-(3) show the share of time women spend on work, household tasks, and leisure. The denominator is the sum of the three tasks. Columns (4)-(6) show the shares for men. The sample includes all married couples who are household heads or wives of the household heads. Individual controls include age, age-squared, indicators for education, urban-rural status, the number of children, an indicator for child under age five. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. We also include a dummy variable indicating state-level passage of the *Ley General de Acceso a Una Vida Libre de Violencia*. Robust standard errors are clustered at the state level and are reported in parentheses. ***, **, * represent statistical significance at 1, 5 and 10 percent levels.

SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016. Municipality-level variables from the INEGI divorce statistics.

Table A3: Unilateral Divorce Reform and Labor Supply, Varied Samples

Outcome:	All Women		All Single Women		Single Women 18-50		Married 1-3 Children		Married No Children	
	1(Work)	Hours Worked	1(Work)	Hours Worked	1(Work)	Hours Worked	1(Work)	Hours Worked	1(Work)	Hours Worked
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Uni x Post	-0.011 (0.020)	-0.809 (0.920)	-0.002 (0.016)	-0.708 (0.993)	0.004 (0.016)	-0.412 (1.071)	-0.049* (0.025)	-1.671 (1.141)	0.053 (0.037)	0.889 (1.444)
N	157,141	157,141	84,391	84,391	74,156	74,156	38,672	38,672	14,099	14,099
Mean Dep	0.53	21.34	0.59	24.66	0.59	24.91	0.48	17.83	0.46	17.74
Controls	X	X	X	X	X	X	X	X	X	X
State x Year Trend	X	X	X	X	X	X	X	X	X	X

NOTES: Difference-in-difference estimation. Binary outcomes are estimated using a Probit and reported coefficients are average marginal effects. Women's hours worked estimated with a Tobit to account for censoring. Columns (1)-(2) represent all women 18-60. Columns (3)-(4) show all single women 18-60. Columns (5)-(6) display all single women 18-50. Columns (7)-(8) show nuclear households with 1-3 kids. Columns (9)-(10) show nuclear households without kids. Individual controls include age, age-squared, indicators for education, urban-rural status, the number of children, an indicator for child under age five. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. We also include a dummy variable indicating state-level passage of the *Ley General de Acceso a Una Vida Libre de Violencia*. Robust standard errors are clustered at the state level and are reported in parentheses. ***, **, * represent statistical significance at 1, 5 and 10 percent levels.

SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016. Municipality-level variables from the INEGI divorce statistics.

Table A4: Unilateral Divorce Reform and Married Men's Labor Supply

Sample:	Hours Worked										Household Hours	Leisure Hours	
	All	No Mexico City	Treated	Urban	Rural	Ages 18-50	Child 0-5	Child Pre-Reform	Drop 5% Tails	Post x Shared	De Jure	All	All
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Uni x Post	-2.089*** (0.634)	-1.856** (0.752)	-2.914 (1.847)	-2.419** (1.095)	-1.984** (0.743)	-2.324** (0.873)	-3.373** (1.469)	-2.219*** (0.728)	-1.852*** (0.612)	-2.870*** (0.672)	-1.911** (0.783)	1.918 (1.662)	0.512 (0.554)
N	60,127	57,452	17,091	18,442	41,685	44,881	17,827	52,962	54,143	49,640	60,127	59,800	59,594
Mean Dep	49.02	49.02	49.78	49.06	49.01	50.85	51.48	49.43	49.36	49.02	49.02	13.64	10.03
Controls	X	X	X	X	X	X	X	X	X	X	X	X	X
State x Year Trend	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTES: Difference-in-difference estimation. Column (1) shows the baseline results for men. Column (2) removes states not treated before 2017. Column (3) excludes Mexico City. Columns (4) and (5) split the sample into rural and urban areas. Column (6) excludes individuals in their 50s. Column (7) includes only individuals with children under age 5. Column (8) includes only individuals who had children before the reform passed (proxy for married pre-reform). Column (9) drops the bottom and top income tails. Column (10) interacts the indicator for post with the share of marriages in the municipality that established common property. Columns (11) and (12) use the original sample to test men's household hours and leisure hours. OLS coefficients are reported for continuous variables. Binary outcomes are estimated using a Probit and reported coefficients are average marginal effects. The sample includes all married couples who are household heads or wives of the household heads. Individual controls include age, age-squared, indicators for education, urban-rural status, the number of children, an indicator for child under age five. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. We also include a dummy variable indicating state-level passage of the *Ley General de Acceso a Una Vida Libre de Violencia*. Robust standard errors are clustered at the state level and are reported in parentheses. ***, **, * represent statistical significance at 1, 5 and 10 percent levels.

SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016. Municipality-level variables from the INEGI divorce statistics.

Table A5: Summary Statistics, Men 18-60

	2008	2010	2012	2014	2016	Total
ENIGH-Individual						
Age	42.58	42.74	42.80	43.12	43.19	42.95
Income (K)	26.14	24.99	25.36	25.60	28.38	26.76
# Children	1.89	1.78	1.73	1.66	1.63	1.72
1(Literate)	0.95	0.95	0.95	0.96	0.96	0.96
1(Urban)	0.23	0.23	0.38	0.27	0.38	0.31
1(Child <5)	0.27	0.26	0.26	0.24	0.24	0.25
1(Working)	0.93	0.92	0.94	0.94	0.95	0.94
Work Hours	47.86	48.33	49.22	49.11	49.86	49.02
Household Work Hours	11.38	9.47	8.71	9.65	9.91	10.03
Leisure Hours	11.47	15.90	14.27	13.64	13.62	13.64
Reported Hours	70.19	73.57	72.12	72.33	73.35	72.53
INEGI-Municipal						
Ratio Female to Male Initiated	0.83	0.77	0.74	0.79	0.81	0.80
Marriage Rate	4.46	4.85	4.89	4.96	5.93	5.24
Divorce Rate	0.90	0.99	1.14	1.39	2.47	1.65

NOTES: The sample includes all married couples who are household heads or wives of the household heads. Income is quarterly nominal income and is reported in pesos.

SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016.

Table A6: Descriptive Statistics

PANEL A: HOUSEHOLDS WITHOUT CHILDREN

	Mean	Median	Std. Dev.	Min.	Max.
<i>Household Characteristics:</i>					
Treat × Post	0.358	0	0.480	0	1
Women Working	0.521	1	0.500	0	1
Women Secondary Schooling	0.641	1	0.480	0	1
Men Secondary Schooling	0.655	1	0.475	0	1
Women's Age	43.966	48	11.614	18	60
Men's Age	46.165	50	11.409	18	60
Urban	0.586	1	0.493	0	1
<i>Year:</i>					
2008	0.162	0	0.369	0	1
2010	0.177	0	0.382	0	1
2012	0.055	0	0.227	0	1
2014	0.134	0	0.341	0	1
2016	0.471	0	0.499	0	1
<i>Household Expenditures:</i>					
Women's Clothing Budget Shares	0.018	0.008	0.027	0	0.264
Men's Clothing Budget Shares	0.017	0.003	0.026	0	0.296
Total Expenditure (K)	21.803	15.679	18.766	2.395	123.757
N = 4,849					

PANEL B: HOUSEHOLDS WITH CHILDREN

	Mean	Median	Std. Dev.	Min.	Max.
<i>Household Characteristics:</i>					
Treat × Post	0.400	0	0.490	0	1
Women Working	0.473	0	0.499	0	1
Women Secondary Schooling	0.761	1	0.427	0	1
Men Secondary Schooling	0.754	1	0.431	0	1
Women's Age	34.649	34	7.620	18	60
Men's Age	37.329	37	8.014	18	60
Urban	0.553	1	0.497	0	1
Proportion Female Children	0.484	0.5	0.383	0	1
Average Children's Age	8.219	8	4.288	0	17
Number of Children	1.998	2	0.743	1	3
<i>Year:</i>					
2008	0.207	0	0.405	0	1
2010	0.184	0	0.387	0	1
2012	0.055	0	0.229	0	1
2014	0.123	0	0.328	0	1
2016	0.432	0	0.495	0	1
<i>Household Expenditures:</i>					
Women's Clothing Budget Shares	0.010	0	0.017	0	0.324
Men's Clothing Budget Shares	0.009	0	0.018	0	0.359
Total Expenditure (K)	23.438	18.336	17.529	2.135	124.941
N = 26,459					

NOTE: The sample in Panel A includes married couples age 18 to 60 with no co-resident children. The sample in Panel B includes married couples age 18 to 60 with 1 to 3 children. Total Expenditure is quarterly nominal expenditure and is reported in thousands of pesos. SOURCE: National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016.

Table A7: Determinants of Women's Resource Shares

	All Couples (1)	With Children (2)	Without Children (3)	All Couples (4)	With Children (5)	Without Children (6)
Uni × Post	-0.011* (0.006)	-0.012* (0.007)	-0.028 (0.028)	-0.013** (0.006)	-0.013* (0.007)	-0.016 (0.010)
Employed Woman				0.036*** (0.009)	0.044*** (0.013)	0.014 (0.015)
Woman's Education	0.060*** (0.013)	0.061*** (0.018)	0.065* (0.037)	0.050*** (0.013)	0.053*** (0.018)	-0.053** (0.021)
Men's Education	0.018 (0.012)	0.044** (0.017)	-0.035 (0.034)	0.021* (0.013)	0.018 (0.018)	0.047** (0.020)
Woman's Age	0.175 (0.504)	1.122 (0.737)	1.165 (1.147)	0.020 (0.507)	0.629 (0.789)	-0.025 (0.745)
Woman's Age ²	-0.746 (0.624)	-1.896** (0.964)	0.366 (1.391)	-0.530 (0.631)	0.459 (0.786)	0.453 (0.868)
Men's Age	-0.509 (0.524)	-0.164 (0.739)	1.096 (1.286)	-0.569 (0.526)	-1.243 (1.035)	-0.324 (0.766)
Men's Age ²	0.561 (0.617)	0.417 (0.894)	-2.348 (1.503)	0.664 (0.622)	-0.661 (0.955)	-0.166 (0.875)
Urban	-0.002 (0.010)	0.011 (0.013)	0.045* (0.025)	-0.003 (0.010)	0.060*** (0.015)	-0.012 (0.019)
Children's Age	0.865*** (0.160)	0.773*** (0.186)		0.805*** (0.160)	0.482** (0.193)	
Proportion Female Children	-0.043*** (0.015)	-0.030** (0.015)		-0.046*** (0.015)	-0.050*** (0.016)	
1 Child	-0.094*** (0.028)			-0.098*** (0.028)		
2 Children	-0.013 (0.018)	-0.002 (0.015)		-0.021 (0.018)	-0.008 (0.016)	
3 Children	-0.000 (0.016)	-0.017 (0.017)		-0.003 (0.016)	-0.005 (0.018)	
Intercept	0.564*** (0.037)	0.625*** (0.059)	0.437*** (0.043)	0.548*** (0.037)	0.612*** (0.048)	0.505*** (0.032)
N	31,305	26,457	4,848	31,305	26,457	4,848
Region FE	X	X		X	X	
State FE	X	X	X	X	X	X
Year FE						

NOTES: * p<0.1, ** p<0.05, *** p<0.01. The full sample includes all households with 1 married couple, and 0 to 3 children. Robust standard errors in parentheses. Age variables are divided by 100 to ease computation. SOURCE: National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016.

C Difference-in-Difference-in-Differences

In addition to our baseline difference-in-difference approach, we add additional comparisons groups within reform states in a difference-in-difference-indifferences analysis. We use four different comparison groups. First, we compare the effect across married women and unmarried women who are cohabitating with a partner. Second, we test the impact by the age of the youngest child in the household. Third, we examine whether the effect varies by marital match quality. In particular, we proxy marital match quality by whether married couples have different education levels or different literacy levels.

To test the effect of the reform across these three groups, we compare the changes in labor force participation across the group of interest in states that passed no-fault divorce laws. For individual i in state s during year t this appears as:

$$Y_{ist} = \alpha + \beta_1(\text{Uni}_s \times \text{Post}_t \times \text{Group}_{ist}) + \beta_2(\text{Uni}_s \times \text{Post}_t) + \beta_3(\text{Group}_{ist}) \\ + \mathbf{X}'_{ist} + \phi_s t + \gamma_s + \tau_t + \epsilon_{ist} \quad (\text{A1})$$

where Y_{ist} is our measure of labor supply. Uni_s indicates state-level adoption of unilateral divorce. Post_t denotes whether the state has adopted the divorce reform as of the first quarter of year t . Group_{ist} is an indicator capturing the group of interest, including married, age of child, and match quality. $\phi_s t$ are state-level time trends, which address any concern about different states having different trends from one another. γ_s and τ_t are the state and year fixed effects, respectively. X_{ist} is a vector of individual controls.

Table A8 shows the difference-in-difference-in-difference results across the four groups of interest. Columns (1)-(2) compares married to unmarried cohabitating couples. The effect disappears from the post-reform indicator, and instead, the effect is concentrated on married women in post-reform states. Married women respond to the legislation by increasing their labor supply at both the extensive and intensive margins, while unmarried women do not change their labor supply. This result suggests that, as expected, changes to divorce laws only affect married couples. The increased marital dissolution risk is felt solely by women who are married

Next, in Column (3)-(4) we test whether the effect differs over the ages of the youngest child in the household. We group women into those whose youngest child is aged: (i) zero to two, (ii) three to five, and (iii) six to 18. The results suggest that while women with younger kids have lower labor supply, the effect of the reform does not differ across child age.

Finally, in Columns (5)-(6) we test whether the effect varies by whether the spouses have different education levels. Different education levels is intended to act as a proxy for marital quality. Based on the estimated coefficients, the results do not appear to vary by marital quality. Finally, we replace literacy for education and test whether the effect varies across spouses with different levels of literacy. Columns (7)-(8) shows similar results with literacy to education. While different levels of education and literacy are not perfect measures of match quality, they provide a sense of whether we should expect the effect to differ across couple type. From these results, we do not see any evidence that the labor supply response differs across the spousal match quality.

Table A8: Unilateral Divorce Reform

Outcome:	Post x Married		Post x Child Age		Post x Education		Post x Literacy	
	1(Work) (1)	Hours Worked (2)	1(Work) (3)	Hours Worked (4)	1(Work) (5)	Hours Worked (6)	1(Work) (7)	Hours Worked (8)
Uni x Post	0.000 (.)	6.204*** (1.006)	0.000 (.)	9.632*** (1.417)	0.000 (.)	7.696*** (1.094)	0.000 (.)	7.623*** (0.897)
Married		-0.030*** (0.009)	-3.452*** (0.811)					
Uni x Post x Married	-0.000 (0.011)	0.118 (0.968)						
Child 0-2			-0.133*** (0.019)	-14.149*** (1.798)				
Child 3-5				-0.046*** (0.013)	-7.068*** (1.161)			
Child 6-18			0.014 (0.010)	-1.207 (0.880)				
Uni x Post x Child 0-2			-0.004 (0.023)	0.757 (2.000)				
Uni x Post x Child 3-5			-0.055*** (0.014)	-4.025*** (1.375)				
Uni x Post x Child 6-18			-0.030* (0.016)	-2.185 (1.545)				
Diff. Education					-0.018** (0.008)	-1.375* (0.765)		
Uni x Post x Diff. Education					0.003 (0.020)	-0.405 (1.519)		
Diff. Literacy							0.002 (0.023)	-0.833 (1.826)
Uni x Post x Diff. Literacy							0.052** (0.024)	3.892* (2.028)
N	85,057	85,057	63,959	63,959	63,959	63,959	63,959	63,959
Mean Dep	0.46	17.21	0.46	17.13	0.46	17.13	0.46	17.13
Controls	X	X	X	X	X	X	X	X
State x Year FE	X	X	X	X	X	X	X	X

NOTES: Difference-in-difference-in-difference estimation. OLS coefficients are reported for continuous variables. Binary outcomes are estimated using a Probit. The sample includes all married couples who are household heads or wives of the household heads. Columns (1) and (2) include unmarried women who are spouses of the household head. Individual controls include age, age-squared, indicators for education, and urban-rural status. Municipality-level controls include divorce rates, marriage rates, and ratio of female filings to male filings. Robust standard errors are clustered at the state level and are reported in parentheses. ***, **, * represent statistical significance at 1, 5 and 10 percent levels.

SOURCE: Individual-level data from the National Household Income and Expenditures Survey (ENIGH) for the years 2008, 2010, 2012, 2014, and 2016. Municipality-level variables from the INEGI divorce statistics.