Domestic Violence and Divorce Law: When Divorce Threats Become Credible

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The cost of divorce influences the bargaining position of spouses and thus their behavior within the marriage. This study takes advantage of a major and unexpected reduction in divorce costs in Spain to estimate the causal effects on domestic violence. Results suggest a 30% decline in spousal conflict as a consequence of the reform. Spousal violence is found to have decreased among couples who remained married after the modification in the law, which suggests an important role for changes in bargaining within the marriage when divorce becomes a more credible (cheaper) option.

I. Introduction

Domestic violence is an important concern for many societies and policy makers worldwide. Statistics available for European countries show that between 20% and 25% of women have been victims of physical abuse at least once during their adult lives and that around 10% have suffered sexual abuse involving the use of force (CAHVIO 2011). Estimates for the United

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States from the National Violence against Women Survey show similar numbers: one out of three women surveyed reported having been raped or physically assaulted since the age of 18 (Tjaden and Thoennes 2000). Moreover, in most of the cases of violence against women, the crime is committed by the intimate partner. In this context, it is natural to ask about the relationship between domestic violence and family policies and, specifically, the rules governing the dissolution of marriages. In recent decades, many countries have adopted reforms aimed at simplifying the dissolution of marriage when one of the spouses wants to end the relationship.[1]

Making divorce easier can affect the incidence of domestic violence, either by facilitating the dissolution of abusive relationships or by making the threat of leaving more credible, thus improving the situation of the victim within the marriage. Economic theories of household bargaining suggest that policies that affect spouses' well-being outside the marriage may also affect within-household distribution through changes in their relative bargaining positions (Manser and Brown 1980; McElroy and Horney 1981). In spite of the important link between domestic abuse and divorce legislation, the empirical evidence available in the economic literature is scarce, and what there is shows conflicting results (Dee 2003; Stevenson and Wolfers 2006).

This paper studies how divorce law affects domestic violence. It begins by outlining a simple model of bargaining within the marriage to provide a framework for understanding the mechanisms through which easier divorce may influence the incidence of spousal conflict. The main prediction of the model is that a reduction in the cost of divorce improves the bargaining position of abused spouses by increasing their threat point (i.e., the minimum utility level required from the marriage to continue being married) and that this leads to a lower equilibrium level of spousal violence among intact couples.

To identify the causal effect, this paper exploits an unexpected and comprehensive reform of divorce legislation that took place in Spain in 2005. The reform allows a spouse to file for divorce unilaterally and without the other spouse having committed fault. As well, the reform eliminates the requirement of mandatory legal separation before divorce, thus reducing the length of time needed to effectively dissolve a marriage. The response of the divorce rate was immediate: in the first year after the reform, the number of divorces grew by 170%. The empirical strategy takes advantage of the fact that the legal change suddenly and substantially reduced the cost of marital dissolution among already married couples but did not affect the cost of

[1] Since the early 1970s, many states in the United States have removed fault as a ground for divorce, and almost all of them allow one of the spouses to file a petition for divorce without the consent of the other. Many European countries have followed similar paths during the past 50 years.

terminating the relationship for unmarried partners, which provides an ideal setting for a difference-in-differences approach. Moreover, the fact that the effective reduction in the cost of divorce varies according to specific characteristics of couples offers additional sources of variation that strengthens the identification of causal effects. In particular, the effective decline in the length of the dissolution process, and consequently, in the cost of divorce, is limited by the presence of young children, in which case there are decisions regarding custody and maintenance that require more time.

This study benefits from a large scale and rich survey on violence against women conducted in Spain both before and after the legislative change. The analysis considers a variety of measures of spousal conflict, ranging from self-reported spousal abuse to technical definitions of spousal violence based on recorded behavior. Moreover, these data allow for defining with precision the respondent's marital status at the time of the legislative change, thus avoiding concerns about selection or composition issues.

The main empirical findings point to a significant decline in spousal violence following the introduction of easier divorce. Self-reported abuse from intimate partners fell by about 27%–36% among married couples, with respect to unmarried ones, as a consequence of the legislative change. Similarly, technical definitions of intimate partner abuse based on recorded behavior evidenced a reduction of about 31%. Moreover, the incidence of spousal violence decreased among couples who remain married after the reform, which suggests an important role for changes in bargaining within the marriage when divorce becomes a more credible option.

The evidence also suggests that there are important heterogeneous impacts arising from the reform. Married women without young children gain the most from the reduction in divorce costs, while the level of spousal abuse for mothers of young children does not change significantly. Having young children seems to prevent women either from leaving an abusive relationship or from credibly threatening to do so. I also explore how the effects of the legislative change vary with the value of opportunities outside marriage. The theoretical framework suggests that there is a level of the outside option at which a woman would be indifferent between filing for divorce and continuing in an abusive marriage and that the impact of the reform should be greater around this margin.[2] When using education as an indicator of the outside option, I observe a greater impact on women at the center-bottom part of the skill distribution, which indicates that women at the margin of indifference have relatively low education.

[2] The intuition is straightforward. Women with very poor alternatives outside marriage cannot take advantage of the lower cost of exiting the relationship, while women with very good outside options have a high and credible threat point, independent of the cost of divorce.

The literature on the effects of divorce law has focused on a variety of outcomes, but little attention has been paid to the effects of easier divorce on spousal violence.[3] Two exceptions are the studies by Dee (2003) and Stevenson and Wolfers (2006), which exploited the variation stemming from the different timing of divorce law reform across states in the United States to assess the impact of unilateral divorce on the prevalence of lethal spousal violence.[4] Stevenson and Wolfers (2006) also studied the impact on nonextreme domestic violence and found that unilateral divorce law caused a reduction of around 30% in both female- and male-initiated conflict.[5]

One concern with previous empirical findings is that an identification strategy based on variation across time and states could be problematic if both the legal definitions of divorce regimes and reforms introduced vary from one state to another (Mechoulan 2005; Allen 2007; Allen and Gallagher 2007).[6] For instance, while many states passed unilateral and no-fault divorce law, some of them require a separation period, while others do not. Also, those separation requirements may range from a few months to 2 years. In other states, changes in the grounds for divorce were accompanied by changes in property division, alimony, and custody rules.[7]

The present study's contribution to this literature is twofold. First, I exploit an unexpected, significant, and clearly defined change in divorce rules in Spain to assess the impact of easier divorce on domestic violence, overcoming some of the shortcomings of previous research. Since family

[3] Prior research has studied the impact of easier divorce on divorce rates (Peters 1986; Allen 1992; Friedberg 1998; Wolfers 2006; González and Viitanen 2009), marriage rates (Rasul 2006), female labor supply (Gray 1998; Stevenson 2008), marriage-specific investments (Stevenson 2007), fertility decisions (Alesina and Giuliano 2006; Drewianka 2008), children's outcomes (Gruber 2004), and crime (Cáceres-Delpiano and Giolito 2012).

[4] Using state-based panel data from 1968 to 1978, Dee found a small and statistically insignificant effect on the number of wives killed by their husbands, and large and statistically significant positive effects—of around 21%—on the number of husbands killed by their wives. Using the same data source, but with a longer panel (1968–1994), Stevenson and Wolfers (2006) found opposite effects on spousal homicide: no impacts on male homicide and a 10% decrease in female homicide.

[5] The relationship between divorce and domestic abuse has also captured the attention of the sociology and criminology literature (Campbell 1992; Wilson and Daly 1992; Gillis 1996; Dugan, Nagin, and Rosenfeld 1999, 2003; Stolzenberg and D'Alessio 2007). However, although alternative theories have been proposed to explain this relationship, empirical research in these fields has, in general, failed to provide credible causal estimates.

[6] Another potential problem of this identification strategy is the plausible endogeneity in the timing of the adoption of reforms by different states (Allen and Gallagher 2007).

[7] The fact that different coding of divorce regimes is one of the sources of the conflicting findings reached by previous empirical studies suggests that these differences matter.

law in Spain is mainly defined at the national level, other potentially relevant changes over the same time period have been accounted for by using individuals not directly affected by the legislative change (unmarried couples) to estimate the evolution in domestic violence in the absence of the reform. Second, the analysis of the impact on spousal conflict is based on data from a large-scale survey on violence against women conducted in Spain both before (1999 and 2002) and after (2006) the legislative change. In addition, given that the survey universe consisted of all adult women living in Spain, independent of their marital status, I can directly disentangle the two main channels through which easier divorce could affect domestic violence. Moreover, the richness of the individual-level data allowed us to go one step further than previous research by considering the potential heterogeneous impacts of the reform.

The rest of the paper is structured as follows. Section II presents a simple theoretical framework for understanding the interaction between divorce law and spousal violence. Section III describes the main institutional context and the natural experiment. Section IV presents the identification strategy and describes the data. Section V presents the main empirical results. Finally, Section VI provides the conclusion.

II. Theoretical Framework: Why Easier Divorce Can Affect Domestic Abuse

Economic models of household bargaining predict that spouses' well-being outside the marriage determines their bargaining power within the marriage (Manser and Brown 1980; McElroy and Horney 1981). Utility upon divorce acts as a threat point, since the continuation of the marriage requires that both spouses receive a utility level at least as high as what they would receive in the case of divorce.[8] In these models, a reduction in divorce costs implies an increase in well-being at the threat point of the spouse that wants divorce the most and hence an increase in her or his bargaining power.

This section draws on previous work to present a simple framework that sheds light on the interaction between spousal violence and divorce costs.[9] In this framework, a marriage produces a surplus that is distributed

[8] Lundberg and Pollak (1993) developed a bargaining model of the household in which the threat point is internal to the marriage and corresponds to a noncooperative equilibrium.

[9] The model presented here is a simple version of a noncooperative model of marriage with domestic violence in which men have all the bargaining power, similar to the one developed by Farmer and Tiefenthaler (1997). Similar predictions can be derived from a cooperative bargaining model like the one presented by Aizer (2010). The main drawback of cooperative models to analyze domestic violence, however, is that they assume that bargaining always leads to Pareto-efficient outcomes, which may not be appropriate in these cases.

between spouses according to some predetermined shares, denoted by s_h and s_w for the husband and wife, respectively. As in other works, utility upon divorce, denoted by O_h and O_w, is a threat point. A key assumption in this model is that outside options remain private information for each spouse.[10] In order to file for divorce, a spouse has to pay a certain cost denoted by C.[11]

Assume now that the husband can force a renegotiation of the distribution of the surplus in order to maximize his value of the marriage using violence. He can either choose violence to claim a transfer T from his wife or choose no violence and remain with his original share of the surplus.[12] If he chooses violence and there is no divorce, his utility becomes $s_h + T$.[13]

The wife responds by deciding whether to stay in the marriage, accepting a lower share of the surplus (because of the transfer and the disutility of violence) or to file for divorce. If she stays, her utility is $s_w - T - V_w$, where V_w is the disutility of violence. If she divorces, her utility is given by $O_w - C$, since she has to assume the cost of divorce.[14]

Wives differ in their outside options, such that $O_w \sim [O_w^{\min}, O_w^{\max}]$. We can interpret this as their labor market potential after divorce or their probabilities of remarrying.[15] The husband does not know the true value of O_w but only the distribution in the population.

The solution of the game can be found by backward induction. The wife will choose between staying and leaving, given the decision of her husband.

[10] Friedberg and Stern (2010) and Zhylyevskyy (2012) provided empirical evidence from the National Survey of Family and Households supporting this assumption. They showed that spouses have incorrect beliefs about the happiness or unhappiness of the other partner outside of marriage.

[11] There is no distinction in the model between mutual consent and unilateral divorce. The regime can be thought of as unilateral since either spouse can make the decision of leaving the marriage without having the consent of the other but incurs a cost that is not present when there is mutual consent for termination. This setup was motivated by the pre-reform divorce regime in Spain, which allowed for unilateral separation based on certain grounds. These grounds included the usual considerations of fault or "de facto" separation, in which case, effective cessation of marital life for a period of 3 years was required. Having to prove fault in court or getting "de facto" separation is the cost that the spouse who wanted to leave the marriage unilaterally had to pay.

[12] This transfer should be interpreted as any redistribution of the gains of the union in favor of the husband.

[13] Violence is thus "instrumental," in the sense that it is used as a means to get a higher share of the surplus.

[14] A natural question here would be why the wife has to pay a cost to get divorced, given that the husband has committed fault (violence). Nevertheless, we can think of C as the cost of having to prove violence in court plus the period of mandatory separation that still must be incurred.

[15] In order to have that some wives divorce in case of violence and others do not, we need to impose some restrictions to the distribution of O_w, such as $O_w^{\max} - C > s_w - V_w - T$ and $O_w^{\min} - C < s_w - V_w - T$.

In the absence of violence, her best strategy is to stay, given that $s_w > O_w - C$ for all wives. If there is violence, she will divorce if and only if $O_w - C > s_w - V_w - T$. Otherwise, she will stay in the marriage and suffer violence from her husband. The husband makes his decision about violence knowing only the probability that she will divorce if her utility within marriage falls below her threat point. He compares the extra utility he would receive if violence were accepted with the probability that she divorces, and he is left with his outside option. A condition for choosing violence, therefore, is that $(s_h + T)(1 - p) + O_h p > s_h$, where p is the probability of divorce as a consequence of violence.[16] If this inequality holds, the husband will choose violence, and the wife will stay in an abusive marriage with probability $1 - p = F_{Ow}[s_w - V_w - T + C]$ and divorce with probability $p = 1 - F_{Ow}[s_w - V_w - T + C]$.

The comparative statics yield clear and intuitive predictions on the impact of a reduction in divorce costs on domestic abuse. The probability of domestic violence, $F_{Ow}[s_w - V_w - T + C]$, increases in C, which implies that abuse among married couples should decrease after the reduction in the cost of divorce.

Importantly, the reduction in domestic violence comes not only from the increase in dissolutions of abusive marriages but also from a reduction in the incentives of husbands to choose violence.[17] The reform, therefore, reduces the equilibrium level of domestic violence through an improvement of the bargaining position of wives.

The model also has implications for the distribution of the effects in terms of individual characteristics. One of the main sources of heterogeneous responses to changes in divorce law is the presence and age of children (Becker, Landes, and Michael 1977; Del Boca and Flinn 1995; Weiss and Willis 1997).[18] Moreover, having children under the age of majority (18 years) lengthens the divorce process since decisions about child custody and maintenance payments have to be made. This implies that the effective decline in the cost of divorce is greater for women without children under age 18 and hence we can expect a more significant reduction in the incidence of domestic violence among these women.

[16] A wife will leave an abusive marriage if she has a good enough outside option, that is, $p = \Pr(O_w - C > s_w - V_w - T) = 1 - F_{Ow}[s_w - V_w - T + C]$, where F_{Ow} is the cumulative distribution function of O_w.

[17] To see this more clearly, the condition for the husband to choose violence can be rewritten as $T(1 - p) > (s_h - O_h)\, p$. If the reform changes the probability p, it also changes the incentives to choose violence in order to force a renegotiation of the surplus.

[18] For instance, mothers of young children are likely to face higher emotional and economic costs of marital dissolution than nonmothers or mothers of older children. They may also suffer more after divorce if it results in underinvestment on their children (Del Boca and Flinn 1995).

A second source of heterogeneous responses to the change in the law are differences in women's outside options. It is easy to show that the reduction in the incidence of abuse is greater for women with better outside options. Moreover, the assumption of a continuous distribution for women's outside opportunities leads to an interesting and testable prediction: the reduction in domestic abuse should come not from women at the top end of the distribution but from women with better outside-of-marriage prospects among those suffering abuse in the old regime.[19]

III. The 2005 Reform of Divorce Legislation in Spain

In July 2005, the Spanish parliament approved a comprehensive reform of the rules governing marital dissolution in Spain.[20] This reform included two key modifications that substantially lowered the barriers to divorce. First, it eliminated the mandatory 1-year legal separation period before divorce. Second, it allowed for unilateral and no-fault divorce.[21] As a consequence of these changes, the divorce regime suddenly went from one with fault and a mandatory separation period to another with easy, unilateral, and no-fault divorce, dramatically reducing both the economic and emotional costs of marital dissolution.

The old regime, which had been in place since 1981, was mainly characterized by a two-step process to deal with marital breakdown. Couples wanting to dissolve the marriage generally had to resort to a period of separation before being able to file for divorce.[22] Once the petition for legal separation had been filed, at least 1 year had to pass before filing for divorce. Separation, in turn, could be obtained by mutual consent or unilaterally, but with the latter based on a legal ground.[23]

The combination of unilateral and no-fault divorce with the possibility of filing for divorce directly, without legal separation as a necessary step,

[19] This is because women with very good outside options are less likely to remain in an abusive marriage. See fig. A1 for an illustration of this argument.

[20] The reform was Act 15/2005 of July 8, modifying the Spanish Civil Code and the Civil Procedure Rules on matters of separation and divorce.

[21] Other modifications included the reduction of the waiting period after which it is possible to dissolve a union from 1 year to only 3 months since the celebration of the marriage and the introduction of the notion of shared custody of children after divorce.

[22] There is one exception in which it is possible to directly file for divorce, which corresponds to the case in which there is risk of violence against the spouse or the children. For a more detailed description of the grounds for divorce in Spain before the reform of 2005, see Boele-Woelki, Braat, and Sumner (2003).

[23] The legal grounds for separation established in the Spanish Civil Code included the usual considerations—unjustified abandonment of the family home, marital infidelity, abusive conduct, being convicted, alcoholism, drug addiction—or the effective cessation of marital life for a period of 3 years.

implied a substantial reduction in the length of time needed to obtain a divorce. Quantifying this time reduction is not an easy task, because it may depend on whether there was mutual consent for separation or not and on the ground on which separation was based. A lower bound for the shortening of the process is 1 year, the period established in the old regime between the separation petition and the possibility of initiating the divorce process. Nevertheless, in some cases, this period could be much longer, particularly in relationships in which there was no mutual consent for termination. The old regime made separation particularly difficult for a spouse who was unhappy in a relationship and wanted to leave without having the consent of the other partner. A person in this situation usually faced two alternatives. One was to go to court and claim separation on the basis of fault, in cases where it existed, which could involve a lengthy and expensive legal battle with the other partner. A second alternative consisted of stopping marital life for a period of 3 years and then claiming legal separation on the basis of de facto separation. In such cases, the change to unilateral and direct divorce can imply a reduction of about 4 years to the dissolution process (3 years to file for legal separation on the ground of de facto separation plus 1 year before being able to file for divorce).[24]

As a consequence of the relaxation of the requirements to obtain a divorce, there was a huge increase in the number of divorce proceedings petitioned. In the first year after the reform, there was a 170% increase in the number of divorce petitions that entered local courts (see fig. 1). This was only partially compensated for by a decline in separations, which can be explained by the fact that legal separations remain only as an option for those not wanting to opt for divorce directly.

In addition, the reform may have had a differential effect on women, who were more constrained than men to exit a relationship due to the high costs of obtaining a divorce. The analysis of which spouse files a petition for the dissolution of the marriage points in this direction. A separation or a divorce can be petitioned by one or both of the spouses. The evidence shows that the proportion of dissolutions initiated by wives increased after the reform, which suggests that women have benefited more from the reduction in divorce costs (see fig. 2).

During the period covered by this study, there were other legislative changes regarding domestic violence in Spain. In particular, two integral plans and one main law aimed at preventing and combating domestic abuse

[24] This is only an upper bound and, probably, in many cases, it would not be reached, even if it is not possible to prove that the other spouse has incurred any of the typified grounds for separation. This is because in those cases, courts usually refer to the so-called "lack of *affectio-maritalis*" as a valid ground for separation (Boele-Woelki et al. 2003).

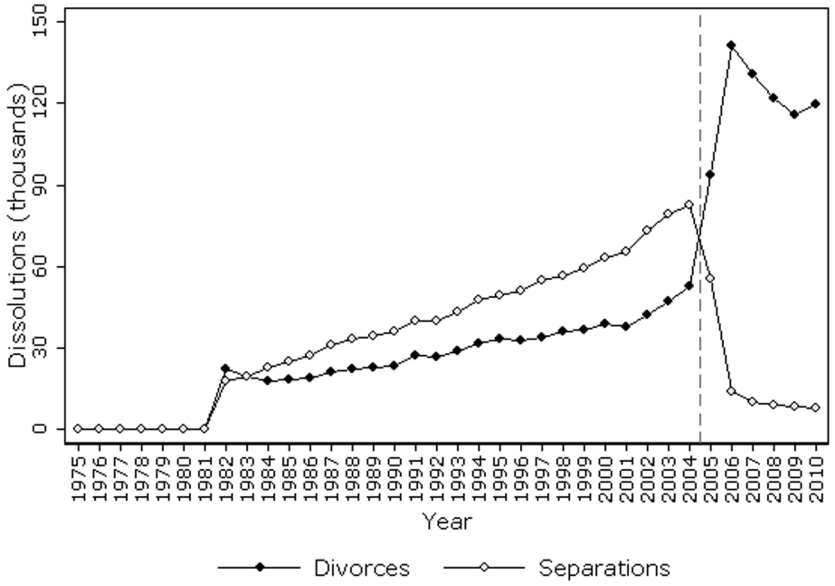

FIG. 1.—Marital dissolution in Spain, 1975–2010. Source: Judiciary statistics provided by the General Council of the Judiciary.

were implemented. The First Action Plan against Gender Violence (1998–2001) and the Second Integral Plan against Domestic Violence (2002–4) were elaborated and implemented by the Spanish Women's Institute. These plans mainly included measures aimed at fostering awareness and prevention for potential victims, increasing the availability of resources for victims, and augmenting sanctions for aggressors. A major landmark in the fight against domestic violence, however, was the introduction in December 2004 of an integral law providing comprehensive protection measures against gender-based violence.[25] These measures can be grouped into three broad areas of intervention: (i) awareness-raising and prevention measures, education and training activities;[26] (ii) penal and judicial measures, such as increased penalties for gender-based offenses and the establishment of specialized courts to deal with this kind of crime; and (iii) increased protection for

[25] This was Organic Law 1/2004 of December 28.

[26] The main measures involve informational campaigns, awareness-raising advertising in the media, reinforcing the notion of equality of rights and opportunities between men and women in school curricula at all levels, training of healthcare professionals in detecting and preventing violence, and training of legal protection and support professionals.

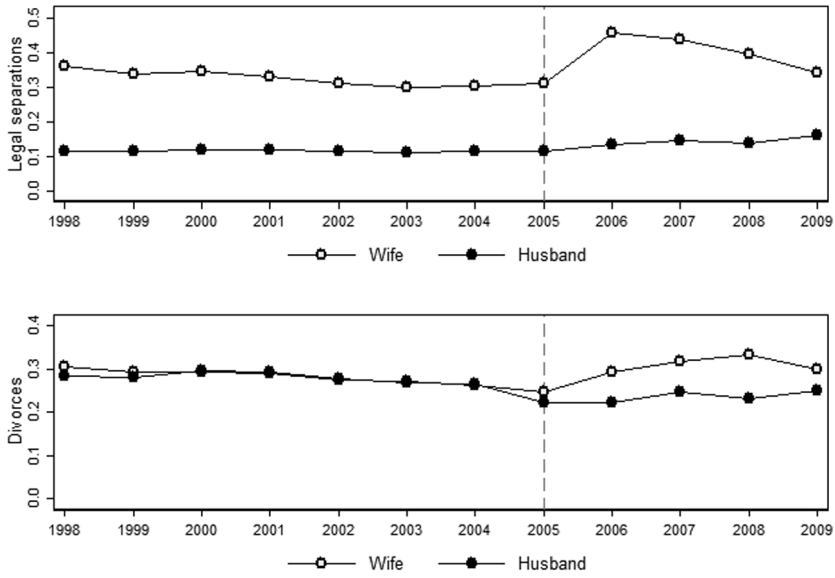

FIG. 2.—Distribution of legal separations (*upper panel*) and divorces (*lower panel*) according to which spouse is the petitioner. Source: National Institute of Statistics of Spain.

victims of gender violence. In general, these laws have affected both married and unmarried women equally.[27]

IV. Empirical Strategy

A. Identification Strategy and Specification

The identification strategy is essentially based on the reform in divorce legislation that took place in Spain in 2005, which can be considered as a source of exogenous variation in the rules of the game regarding marriage dissolution. As such, this reform constitutes a natural experiment and

[27] The only exception is given by measures aimed at facilitating separation and divorce procedures in cases in which domestic violence is alleged. The Law against Gender Violence of 2004 created specialized courts to deal with gender violence crimes, which also have competence in civil law matters related to criminal processes under their jurisdiction. This implies that separation or divorce procedures in which women allege spousal abuse are heard by these courts (around 4% of the total number of separations and divorces decreed since the creation of these courts have fallen under their jurisdiction). But even in the case that these measures have a differential impact between married and unmarried women, this effect would be intrinsically related to the main purpose of this paper, which is to assess the impact of easier divorce on the level of domestic violence.

provides a unique opportunity to identify the causal effect of easier divorce on domestic violence.

Two basic conditions should be fulfilled in order for this legislative change to constitute a valid natural experiment: that it be unanticipated and that it be exogenous to the evolution of domestic violence. There are reasons to believe that these conditions are guaranteed. First, the reform in divorce legislation was part of a series of legislative measures concerning family law introduced by the Socialist Party right after winning the general elections in March 2004. The reason why these changes can be considered unexpected is that the election results themselves were totally unexpected. Until shortly before the national elections to the Spanish parliament were to take place, the incumbent party held a majority of public support according to available forecasts. But a large-scale terrorist attack that hit the commuter train system in Madrid just 3 days before the election suddenly changed the election outcome and resulted in a surprising victory of the opposition Socialist Party (Chari 2004; Colomer 2005; Bali 2007; Montalvo 2011).

Second, the objective of the reform was unrelated to the evolution of domestic violence. The stated purposes of the law were to give spouses the freedom to decide whether they want to continue being married or not and to eliminate the double procedure (first separation and then divorce) usually needed to end a marriage, reducing both the economic and emotional costs of marital disruption.

The identification strategy used in this paper then relies on a difference-in-differences approach (Heckman, Lalonde, and Smith 1999), using married couples as the treatment group and cohabiting partners and individuals in a relationship but not legally married as a control group. That is, I compare the change in spousal violence for married women before and after the reform in divorce law to the change in spousal violence for women not directly affected by the legislative change (i.e., those in a relationship but not legally married). In this way, this empirical framework allows for controlling for systematic differences in the level of domestic violence both between married and unmarried women and between before and after the change in the law.

The key identifying assumption is that both the treatment and the control groups would have followed the same trend in the outcome variable in the absence of any reform. Under this assumption, it is possible to use the evolution of the average difference over time in the control group as a benchmark to estimate the treatment effects.

One potential threat to the validity of this assumption comes from aggregated shocks that have a differential impact across treatment and control groups. This may happen if the unobserved differences between the two groups are correlated with those shocks. A potential candidate for such a

shock is the approval of the Law against Gender Violence at the end of 2004. Nonetheless, most of the measures for protection against gender violence are aimed at all women regardless of marital status.

Although there is no formal test to check the assumption of common trends between the treatment and control groups, there are different ways to examine its validity. In particular, we can use regression analysis to investigate whether there is evidence to reject that the trends were parallel before the change in the law. This test is carried out in the empirical analysis.

Another key assumption of the difference-in-differences estimator is that there are no changes in the composition of the groups as a consequence of the reform. Otherwise, coefficients would be biased. This is not a concern in the present study since the data at hand allow for defining the groups in terms of their marital situation before the enactment of the new regime, so the composition of the groups is unchanged by construction.[28]

The difference-in-differences approach translates into the following specification:

$$DV_{igt} = \beta_0 + \beta_1 Married_g + \beta_2 (Married_g \times Post_t) + \sum_t \lambda_t Year_t + X'\gamma + \mu_{igt}, \quad (1)$$

where DV_{igt} is a measure of domestic violence for individual i, marital group g, and year t; $Married_g$ is an indicator of the treatment group; $Post_t$ is a binary indicator for the post-reform period; and therefore β_2 is the difference-in-differences estimator.

Individuals affected by the legal change are those who were married or legally separated, but not yet divorced, when the law was passed. Given that the post-reform data were collected 1 year later, the definition of the treatment group should take into account potential transitions among marital states during this period in order to avoid changes in the composition of groups. Available information about the duration of the relationship for intact marriages and about elapsed time since the breakup for those that terminated makes it possible to identify this group with preci-

[28] Brassiolo (2014) looks at the impact on extreme violence (spousal homicide), in which case the data do not allow knowing the marital status of the victim at the time of the reform. Given that the composition of the groups could be affected by the reform, the analysis used microdata from the census of marriages to test: (i) whether there is evidence of a structural break in the time series of marriages and (ii) whether the composition of those that married after the reform changed. The results showed no evidence of a change in the propensity to marry that can be attributed to the reform and little evidence of an effect on the composition of new couples in terms of observable characteristics of spouses.

sion. The treatment group then includes women who have been married for at least 1 year, or who are legally separated, or who have divorced during the previous year. As well, to ensure the comparability of the treatment group over time, the same definition is used for the years 1999 and 2002.

There are two main measures of domestic violence to be used as dependent variables. The first is a measure of self-reported abuse and is based on the interviewee's perception of having been the victim of abuse from her intimate partner. The variable is defined as a binary indicator that takes value 1 if the woman reports abuse from her intimate partner during the previous year. The second measure is called "technical abuse," since it is based on a series of 13 questions referring to behaviors or situations considered by experts as strong indicators of mistreatment. The survey contains information about the frequency with which these situations occur (frequently, sometimes, rarely, never) and about who is the offender. "Technical abuse" is a binary variable that takes value 1 if any of these 13 indicators occurs "frequently" or "sometimes" and the offender is the intimate partner of the victim. As well, this second measure can be disaggregated into four additional measures of abuse—physical, sexual, psychological in the form of control, and psychological in the form of emotional mistreatment, according to a classification elaborated by Alberdi and Matas (2002). In the tables below, I consider these definitions of violence as alternative outcomes. The details of the construction of these measures, as well as the description of the 13 indicators of abuse and the corresponding sampling frequencies, are reported in table A5.

These different measures of abuse lead to different sample definitions. On the one hand, when the dependent variable is self-reported abuse, since this information is available for all surveyed women, the sample includes all women who were in a relationship during the previous year. On the other hand, when the dependent variable is a measure of technical abuse, since that information is only available for women who are in a relationship at the time of the survey, the sample is restricted to women who fulfill that condition.

Finally, vector X_{igt} includes a rich set of control variables that can affect the level of domestic violence and also be correlated with marital status. It includes control variables for the woman's age, education, labor market status, presence and number of children, religious beliefs, urban-rural residence, and region fixed effects. In some specifications, this vector also contains controls for the education and labor market status of the partner.

B. Data and Descriptives

The empirical analysis relies on microdata from the Survey on Violence against Women, a nationally representative survey conducted by the Spanish Women's Institute in 1999, 2002, and 2006. This survey is representative

of all adult women (age 18 or older) living in Spain, irrespective of whether they are in a relationship or not.

The survey contained specific questions on abuse that make it possible to construct the measures of self-reported as well as technical abuse mentioned before.[29] The questionnaire also included detailed questions regarding the partnership status of the respondent, which allows for distinguishing up to seven different marital groups: married, cohabiting, legally separated, divorced, widowed, dating, and single. There is also information on the duration of the relationship. In addition, the survey provides information for both the woman and her partner in case she has one on demographic characteristics, labor market status, educational background, and household composition.

The sample for the analysis consists of the 1999, 2002, and 2006 surveys. Table 1 presents the main descriptive statistics of the data. The numbers of observations are 20,552 in 1999, 20,652 in 2002, and 32,426 in 2006. Important for the validity of the difference-in-differences approach with repeated-cross-sectional data is that samples come from the same population. This seems to be the case when we observe the sample composition in terms of the main observed characteristics.[30]

It is interesting to see how the different measures of intimate partner abuse relate to each other. As expected, all correlation coefficients are positive and statistically significant. The coefficient for the correlation between self-reported and technical abuse is 0.326. Moreover, according to the correlation between self-reported abuse and the four types of violence in which technical abuse can be decomposed, it is possible to deduce that women who declare having been victims of abuse tend to associate this situation with physical abuse ($\rho = 0.464$) more than with psychological (emotional) abuse ($\rho = 0.374$), psychological abuse in the form of control ($\rho = 0.322$), or sexual abuse ($\rho = 0.153$).

The key assumption for the validity of the identification strategy (i.e., common trends) can be investigated in a regression framework, by estimating equation (1) for the pretreatment period, where the dummy Post_t takes the value 1 in 2002 and 0 in 1999. As table A1 shows, the coefficient for the interaction of the treatment indicator and the post dummy is always statistically insignificant, which indicates that there is not enough evidence to reject the assumption of parallel trends.

[29] Respondents to the survey were queried about whether they thought they had been victims of abuse from their intimate partner during the previous year and at any time in their adult lives. They were also asked detailed questions about a series of situations considered indicators of violence, the frequency of this happening, and their relationship to the perpetrators.

[30] Although in some cases there are statistically significant differences between years, these are usually quantitatively small.

Table 1
Descriptive Statistics: Survey on Violence against Women

	Total Sample		Sample Means			Difference in Means	
	Mean	SD	1999	2002	2006	2002 versus 1999	2006 versus 2002
Measures of abuse (0–100 scale):							
Self-reported	2.229	14.762	2.266	2.374	2.113	.108	−.261*
Technical	10.619	30.808	12.231	11.554	9.040	−.676*	−2.514***
Physical	1.860	13.512	2.180	2.062	1.537	−.118	−.525***
Sexual	3.546	18.495	4.650	3.862	2.671	−.788***	−1.192***
Psychological (control)	2.709	16.234	3.049	2.949	2.348	−.100	−.601***
Psychological (emotional mistreatment)	7.344	26.086	8.174	7.986	6.430	−.188	−1.556***
Woman's age:							
18–29	.212	.409	.238	.209	.197	−.029***	−.013***
30–39	.193	.394	.179	.184	.206	.005	.022***
40–49	.169	.375	.153	.163	.183	.010***	.020***
50–59	.148	.356	.143	.152	.149	.009***	−.003
60 or older	.278	.448	.286	.291	.264	.005	−.026***
Woman's education:							
Primary or less	.384	.486	.442	.413	.330	−.029***	−.083***
Lower high school	.238	.426	.212	.240	.252	.028***	.012***
Upper high school	.198	.399	.192	.193	.205	.001	.012***
University	.180	.384	.154	.154	.213	.001	.058***
Woman's marital status:							
Single	.112	.316	.122	.109	.108	−.013***	−.001
Dating	.100	.299	.108	.100	.094	−.008***	−.005**
Cohabiting	.029	.168	.018	.024	.039	.006***	.015***

Married	.617	.486	.604	.625	.619	.022***	−.006
Separated	.021	.142	.020	.018	.023	−.002	.005***
Divorced	.014	.118	.011	.014	.017	.003***	.003***
Woman's labor market status:							
Employed	.347	.476	.301	.308	.402	.006	.095***
Unemployed	.078	.268	.079	.079	.076	.000	−.003
Out of labor force	.573	.495	.619	.612	.520	−.007	−.092***
Woman's partnerships:							
In a relationship	.756	.429	.739	.759	.765	.020***	.006
Duration current relationship (years)	22.234	15.118	21.791	22.824	22.131	1.033***	−.693***
Children:							
With children	.709	.454	.694	.714	.714	.020***	.000
No. of children	1.659	1.442	1.685	1.689	1.623	.004	−.066***
Partner's age:							
Age	51.526	14.635	51.477	51.958	51.282	.481***	−.675***
Partner's education:							
Primary or less	.336	.472	.402	.363	.279	−.039***	−.084***
Lower high school	.262	.440	.236	.272	.273	.036***	.001
Upper high school	.209	.407	.196	.202	.223	.006	.021***
University	.192	.394	.166	.163	.226	-.003	.062***
Observations	73,630		20,552	20,652	32,426		

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.
* $p < .10$.
** $p < .05$.
*** $p < .01$.

V. Empirical Results

Table 2 shows the results of estimating equation (1) by ordinary least squares (OLS) when the dependent variable is the dummy for self-reported abuse.[31] Column 1 presents the results for a specification with no controls beyond the treatment indicator and year dummies. The difference-in-differences coefficient suggests a decline in self-reported abuse for the treatment group in comparison with the control group after the reform in divorce law by 0.75 percentage points. Column 2 includes individual-level controls—age, education, labor market status, legal marital status, presence and number of children, immigration status, and religious beliefs, while column 3 also includes region fixed effects and a dummy for urban residence. After controlling for individual characteristics and aggregated variables, the estimated coefficient remains negative and statistically significant. In the preferred specification (col. 3), easier divorce reduces self-reported abuse by 0.65 percentage points (29% of the sample mean). If we want to control for partner's education and labor market status, we need to restrict the sample to women with a partner at the time of the interview.[32] This is reported in column 4, which shows that self-reported abuse decreases by 0.59 percentage points (27% of the sample average).

The estimate reported in column 3 reflects the impact of easier divorce on domestic violence through the two possible channels: the dissolution of abusive marriages and the decrease in violence among intact households. In order to capture the change in domestic violence explained by a change in the wife's bargaining position within the household, column 5 reports the results when the treatment group is restricted to women who were already married when the law was passed and continued being married at the time of the survey. The coefficient not only remains negative and precisely estimated, but it is also larger (equivalent to a reduction of 36% of the sample mean) than the estimate for the total effect of the legislative change.[33] This implies that the bulk of the decline in domestic abuse when the obstacles to divorce are lowered is explained by a decreasing propensity toward

[31] The main results discussed in this section are robust to using a binary dependent variable model, such as probit or logit. Nonetheless, OLS is the preferred estimation method given the problematic interpretation of interaction effects in probit and logit models, as shown by Ai and Norton (2003).

[32] While self-reported abuse refers to the previous year, information on partners is only available for women who declared having a partner at the time of the survey.

[33] If we control for partner characteristics (which requires restricting the sample to women with partners at the time of the survey), the estimated coefficient remains negative and statistically significant (equivalent to a reduction in partner abuse of 29% of the sample mean).

Table 2
Impact on Self-Reported Abuse

	Dependent Variable: Self-Reported Abuse (Dummy)					
	Abuse during Previous Year					Abuse before Previous Year (Placebo)
	(1)	(2)	(3)	(4)	(5)	(6)
Married × Post	−.746***	−.651***	−.647***	−.599**	−.686***	.078
	(.212)	(.212)	(.212)	(.295)	(.205)	(.211)
Married	1.720***	3.457***	3.450***	.726	1.633***	−.819
	(.140)	(.763)	(.764)	(.755)	(.587)	(.595)
Individual controls	No	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Region controls	No	No	Yes	Yes	Yes	Yes
Partner controls	No	No	No	Yes	No	No
Adjusted R^2	.002	.024	.025	.008	.007	.030
N	69,895	69,838	69,838	54,757	67,895	69,838
RMSE	14.682	14.515	14.512	14.473	13.507	12.910
Mean (depvar)	2.209	2.208	2.208	2.159	1.872	1.748

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.

NOTE.—The sample includes adult females in 1999, 2002, and 2006 who had a partner during the year before the interview. The dependent variable is a binary indicator (rescaled to 0–100) for self-reported abuse during the previous year (cols. 1–5) or any time in life before the previous year (col. 6). The treatment group includes women who were married at the time of the reform in divorce legislation, independently of their current marital status, with the exception of col. 5, which restricts the treatment group to women that were married when the reform was passed and continued being married when the survey was conducted. The control group includes women with partners during the previous year but who are not legally married. Individual control variables include age group dummies, education dummies, labor market status, dummies for legal marital status, a dummy for the presence of children, the number of children, immigration status, and dummies for religious beliefs. Region controls include region fixed effects and a dummy for urban residence. Partner controls include dummies for education and labor market status of the partner. Since partner variables refer to the current partner, including these controls (col. 4), the sample is restricted to women with partners at the time of the interview. RMSE = root-mean-square error; Mean (depvar) = mean of the dependent variable. All regressions include year dummies and are estimated by ordinary least squares. Robust standard errors are reported in parentheses.

** $p < .05$.

*** $p < .01$.

partner abuse within intact households. Lowering the barriers to divorce seems to act as a strong deterrent to spousal violence.

Finally, to test the robustness of these results, column 6 reports the results of a placebo test. In this case, the dependent variable is a dummy set equal to 1 if the person declares having been victim of abuse at any point in life before—but not during—the last 12 months. This is a measure of self-reported abuse in a period that precedes the legislative change and consequently should be unaffected by the reform. The result confirms this hypothesis. The coefficient is statistically insignificant and relatively low in magnitude, basically indicating no effect of the legislative change on past abuse, as we would have expected.

The second measure of violence is the indicator technical abuse, as defined in Section IV. These results are shown in the first three columns of table 3, which differ in terms of the control variables included in the regressions. The preferred specification, presented in column 3, controls for individual characteristics of the woman and her partner, year and region fixed effects, and urban-rural residence. The difference-in-differences coefficient indicates a reduction of 3.26 percentage points in the incidence of technical abuse (about 31% of the sample mean) since the introduction of easier divorce. The remaining columns show the results for the four different categories of abuse in which technical abuse can be disaggregated. These results provide evidence confirming the main conclusion of a negative impact of easier divorce on domestic violence. In almost all cases, the difference-in-differences coefficient is negative and precisely estimated.[34]

These results are robust to alternative definitions of technical abuse. Instead of defining it as the presence of any of the 13 indicators of abuse available in the data, we can use the number of indicators of abuse present in order to reflect the intensity of violence. The results are reported in table A2. In column 1 the model is fitted by OLS, while in column 2 the count nature of the dependent variable is taken into account and a Poisson regression model is used to derive the results. In columns 3–7, the dependent variable is a binary variable that takes the value 1 if at least a certain number n of indicators of abuse are present, for $n = 2, \ldots, 6$. In all cases the estimated effect remains negative and statistically significant, confirming the finding of a decline in spousal violence after the introduction of easier divorce.

In sum, the evolution of the main measures of abuse over time and across groups points to both a statistically significant and economically relevant decline in domestic violence after the introduction of easier divorce. An improvement of the bargaining position of wives in intact marriages seems to be the main mechanism driving this result.

[34] The exception is the case of psychological abuse in the form of control, which is only statistically different from zero at a significance level of 12% or higher.

Table 3
Impact on Technical Measures of Abuse

	Dependent Variable: Measures of Technical Abuse (Dummies)						
	Technical Abuse			Physical Abuse	Sexual Abuse	Psychological Abuse (Control)	Psychological Abuse (Emotional)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Married × Post	−4.206***	−3.278***	−3.258***	−.592**	−1.472***	−.487	−2.230***
	(.543)	(.541)	(.546)	(.233)	(.311)	(.306)	(.444)
Married	8.126***	.655	.709	.577	1.241*	−1.193	.154
	(.367)	(1.415)	(1.421)	(.360)	(.723)	(.989)	(1.159)
Individual controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Partner controls	No	No	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	.009	.020	.022	.009	.012	.006	.017
N	55,535	55,495	54,757	54,757	54,757	54,757	54,757
RMSE	30.662	30.472	30.449	13.342	18.410	16.107	25.845
Mean (depvar)	10.613	10.601	10.605	1.830	3.556	2.681	7.334

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006. RMSE = root-mean-square error.

NOTE.—The sample includes adult females in 1999, 2002, and 2006 who had a partner at the time of the interview. The dependent variables are binary variables (rescaled to 0–100) for technical abuse (cols. 1–3), physical abuse (col. 4), sexual abuse (col. 5), psychological abuse in the form of control (col. 6), and psychological abuse in the form of emotional mistreatment (col. 7). The treatment group includes currently married women who were married at the time of the reform in divorce legislation. The control group includes women with partners but who are not legally married. Individual control variables include age group dummies, education dummies, labor market status, dummies for legal marital status, a dummy for the presence of children, the number of children, and dummies for religious beliefs. Region controls include region fixed effects and a dummy for urban residence. Partner controls include dummies for education and labor market status of the partner. RMSE = root-mean-square error; Mean (depvar) = mean of the dependent variable. All regressions include year dummies and are estimated by ordinary least squares. Robust standard errors are reported in parentheses.

* $p < .10$.
** $p < .05$.
*** $p < .01$.

The availability of individual-level data allows me to go one step further and test whether the effects of the reform vary across different types of women. I consider two sources of heterogeneous impacts of the legislative change on spousal conflict: the presence of young children and the education level of the woman.

A. The Presence of Young Children and the Intensity of the Treatment

As discussed before, the intensity of the treatment varies across women depending on their parental status. If the reduction in the cost of divorce is less important for mothers of young children than for either nonmothers or mothers of older children, we can expect smaller reductions in domestic violence for the former than for the latter.

I consider the presence of children under 18 years of age who live in the parental home as one of the main sources of differences in treatment intensity. The results of this exercise are reported in table 4. Panel A of the table shows the results when the sample is restricted to women with young children, while panel B does the same for women either without children or with older children not living with them. These results clearly show that the decline in domestic violence, measured both in terms of self-reported and technical abuse, is driven by the effects on women without young children at home. Difference-in-differences estimates for mothers of young children are not statistically different from zero in any of the measures of abuse considered in the analysis. On the contrary, those estimates are negative and precisely calculated in the case of women without young children at home. Not having young children, then, seems to be a necessary condition to take advantage of the reform in divorce legislation to discourage spousal violence.

To better understand these results, it is important to analyze the levels of abuse in the pre-reform period for both types of women. Before the change in the law, women with young children reported higher levels of abuse than women without young children (3% and 2%, respectively). Even though self-reported abuse declined after the reform in divorce law for all women, it only declined, relative to the control group, in the case of women without young children. Similarly, women with young children were subject to higher levels of technical abuse before the reform (12% vs. 8% in the case of women without young children). When easier divorce was made possible, technical abuse declined for all women, but it declined much more, relative to the control group, for women without young children.

To test the robustness of these results, table A3 presents an analysis based on a different identification strategy. Instead of using unmarried women as a benchmark for the absence-of-policy evolution of domestic abuse, this specification focuses on treated individuals and exploits the dif-

Table 4
Heterogeneous Impact by Presence of Young Children Using Unmarried Women as Control Group

	Dependent Variable	
	Self-Reported Abuse (1)	Technical Abuse (2)
A. Women with young children:		
Married × Post	1.475	.103
	(1.221)	(2.215)
Married	6.598**	−3.154*
	(3.203)	(1.755)
Post	−1.913	−2.688
	(1.215)	(2.211)
B. Women without young children:		
Married × Post	−.854***	−4.123***
	(.246)	(.617)
Married	3.012***	2.959***
	(.727)	(.690)
Post	.182	−.173
	(.166)	(.525)

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.

NOTE.—The sample is split between mothers of children under 18 years of age and women without young children, independently of whether they are mothers or not. Each subsample includes adult females in 1999, 2002, and 2006. Dependent variables are dummy variables (rescaled to 0–100) for different measures of abuse. Self-reported abuse refers to the last 12 months, while all technical measures of abuse refer to the current situation. The treatment group includes women who were married at the time of the reform in divorce legislation, independently of their current marital status. The control group includes women with partners but who are not legally married. The control variables included in the regressions are age group dummies, education dummies, age and education of the husband, number of children, and region fixed effects. The regressions are estimated by ordinary least squares. Robust standard errors are reported in parentheses.

* $p < .10$.
** $p < .05$.
*** $p < .01$.

ferences in the intensity of the treatment. The sample consists of women who were married when the new divorce law became effective, and the differential effect of the reform on women without young children is captured by an interaction term between a dummy variable that takes the value 1 for women without young children and the post-reform indicator. The parameter estimate for this interaction term is negative and statistically significant, independently of the measure of abuse considered, which suggests that the level of violence decreases more after the legislative change among married women without young children. These results confirm the previous findings of a more significant effect of the reduction in divorce cost on married women who did not have young children when the legislative change was enacted.

B. Education as a Measure of Wives' Outside Options

A second reason the effects of the reform may vary across women is that the value of their outside opportunities differ. In principle, married women with good prospects outside of marriage are less likely to remain in abusive relationships, even when the cost of divorce is high. A reduction in the cost of divorce then would lead to little change in the incidence of violence among those women. Women with poor alternatives outside of marriage, on the other hand, are less likely to benefit from a decrease in the cost of divorce, since they would still be better off in an abusive relationship than with divorce. Therefore, we would expect the effects of the change in the law to be greater with abused wives who are closer to the margin of indifference between continuing in an abusive marriage or getting divorced.

One possible indicator of the value of the outside option for married women is their educational level. Table 5 presents the results when the total sample is disaggregated according to women's educational levels. Panels A, B, and C, present the main coefficients for women with low (primary school or less), intermediate (high school), and high (university) education levels, while the dependent variables are self-reported abuse (col. 1) and technical abuse (col. 2). The parameter estimates indicate that the reduction in divorce cost is associated with a decrease in domestic violence among married women, as compared to to unmarried women, although these coefficients are only estimated with precision in the cases of low and intermediate education groups. In other words, the level of domestic violence among married women versus unmarried ones only decreases toward the center and bottom part of the distribution of skills.[35]

The levels of self-reported abuse were relatively similar for women of all educational levels (around 2.2%) in the pre-reform period, and they declined in all education categories after the change in the law. But this decrease was greater, relative to the control group, for low- and medium-education women. In the case of the technical measure of spousal conflict, less educated women were abused at higher levels before the reform (12% for women with low education, 8% for women with medium education, and 6% for women with high education), and in all cases spousal conflict fell with the change in the law. Once more, the negative difference-in-differences coefficients are explained by a greater decline in technical abuse, relative to the control group, for low and medium education women.

[35] In order to analyze whether the effects are statistically different along those segments of the skill distribution, we can run the regression with the full sample and test whether the coefficients for the different education levels differ from each other. The results of such an exercise (which are available from the author upon request) show that, for self-reported abuse, the reform leads to a reduction in domestic violence that does not vary significantly across skills, while for technical abuse, the effects of the reform are greater for low-skilled women than for intermediate- and high-skilled ones.

Table 5
Heterogeneous Impacts by Education Level Using Unmarried Women as a Control Group

	Dependent Variable	
	Self-Reported Abuse (1)	Technical Abuse (2)
A. Women with low education level:		
Married × Post	−.753**	−8.842***
	(.316)	(3.050)
Married	2.837***	3.662*
	(1.027)	(1.976)
Post	.351	3.794
	(.248)	(3.027)
B. Women with intermediate education level:		
Married × Post	−.836**	−2.742***
	(.347)	(.748)
Married	3.826***	1.157
	(1.418)	(.802)
Post	−.108	−.376
	(.284)	(.665)
C. Women with high education level:		
Married × Post	−.324	−1.350
	(.495)	(.956)
Married	4.013**	1.164
	(1.628)	(.987)
Post	−.252	−.966
	(.351)	(.825)

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.

NOTE.—The sample is split by education level of women. Low education refers to women with primary school or less, intermediate education to women with high school, and high education to women with university degrees. Each subsample includes adult females in 1999, 2002, and 2006. Dependent variables are dummy variables (rescaled to 0–100) for different measures of abuse. Self-reported abuse refers to the last 12 months, while all technical measures of abuse refer to the current situation. The treatment group includes women who were married at the time of the reform in divorce legislation, independently of their current marital status. The control variables included in the regressions are age group dummies, age and education of the husband, presence of young children at home, number of children, a dummy for urban-rural residence, region fixed effects, immigration status, and religious beliefs. The regressions are estimated by ordinary least squares. Robust standard errors are reported in parentheses.

* $p < .10$.
** $p < .05$.
*** $p < .01$.

Again, to test the robustness of these results, we can investigate how the impact of the reform varies among married women with different educational levels. Table A4 reports the results of a regression on the subsample of women who were married at the time the legislative change was enacted. The post-reform variable captures the change in the level of violence for married women with low educational levels, while the interactions with the binary indicators for the other skill levels capture the differential effects for women with those skills. In columns 1 and 2, the sample includes married women of all ages, and the results point to a similar conclusion

to that obtained when unmarried women were used as a control group: the incidence of abuse decreases along the whole distribution of skills, and the reduction is greater among low-skilled women when the technical definition of abuse is used. In columns 3 and 4, the sample is restricted to middle-aged women (i.e., between 30 and 50 years of age), who are more likely to have labor market alternatives than older women, to investigate the distribution of the impacts on a subgroup for which the education level may be a more appropriate measure of opportunities outside of marriage. This exercise leads to a slightly different result. In the case of self-reported abuse (col. 3), the only subgroup that benefits from the reduction in the cost of divorce is the one of women with intermediate education. There is no significant change in the incidence of spousal abuse for either low- or high-skilled women. In the case of technical abuse (col. 4), the estimated effect on domestic abuse is negative for women with low education, and although the impact seems to be greater around the center of the skill distribution, the difference is not statistically significant.

VI. Conclusions

This study investigated whether easier access to divorce can reduce the incidence of spousal violence. To identify the causal effects, the study exploited exogenous variation in the cost of marital dissolution stemming from an unexpected reform of the divorce regime in Spain in 2005. This reform allowed for unilateral and no-fault divorce, and it eliminated the 1-year mandatory separation period, reducing both economic and emotional costs of marital breakup. Furthermore, the study also took advantage of the fact that this change reduced the cost of terminating a relationship for couples who were legally married when the law became effective, but not for unmarried couples, and therefore, the empirical work follows a difference-in-differences methodology. The main findings point to a sizable decline in domestic abuse after the enactment of the new law.

The empirical analysis has revealed a decline in spousal conflict among married couples with respect to unmarried ones of between 27% and 36%. Both self-reported spousal abuse and technical definitions of abuse based on recorded behavior confirm that the introduction of easier access to divorce has led to a decline in spousal conflict. These results are robust to the use of alternative definitions of domestic violence and are not driven by changes in the composition of the groups. Moreover, these findings are reinforced by the analysis of the heterogeneous responses to the legal change based on differences in the intensity of the treatment. Married women with young children are less affected by the reduction in the cost of divorce than childless women because the presence of young children limits the reduction in the length of the divorce process. The results show a greater reduction in domestic violence against women without young children.

Easier divorce can reduce domestic violence by either increasing the propensity toward dissolution of abusive relationships or decreasing the propensity toward abuse in intact marriages. To disentangle these two channels, this study focused on the effects on couples who were married when the law was enacted and continued being married 1 year later when the data were observed. The results suggest that the bulk of the reduction in violence can be explained by the improvement in the bargaining position of wives in marriages that remain intact. The availability of easier access to divorce thus seems to make the threat of leaving the marriage more credible, which is shown to be a strong deterrent of spousal violence.

Appendix
Supplementary Figures and Tables

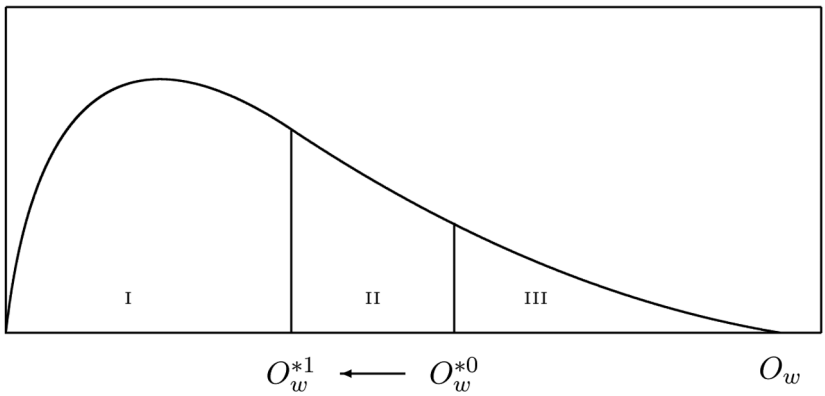

FIG. A1.—Distribution of wive's outside opportunities and reduction in the cost of divorce. Before the reform, the marginal woman (i.e., one who is indifferent between divorce and an abusive marriage) had an outside option given by O_w^{*0}. When the cost of divorce falls to $C_w^1 < C_w^0$, the new marginal woman places to the left, say at O_w^{*1}. For husbands whose wives' outside options lie between these two values, it was optimal to be violent under the old regime, but it is not after the reduction in the cost of divorce. Women located in Sector II, therefore, will benefit from the reduction in divorce costs. For women in Sector I, the reduction in the cost of divorce is not enough for them to credibly threaten with divorce, while for women in Sector III the reform has no relevant effects since they were not affected by domestic violence.

Table A1
Placebo Test for Parallel Trends

	Dependent Variable					
	Self-Reported Abuse			Technical Abuse		
	(1)	(2)	(3)	(4)	(5)	(6)
Married × Post	−.284	−.085	.345	−.419	−.159	−.064
	(.283)	(.280)	(.394)	(.737)	(.736)	(.745)
Married	1.751***	13.455***	7.363***	8.396***	.239	1.253
	(.196)	(1.347)	(2.491)	(.531)	(2.431)	(2.614)
Post	.262	.117	−.328	−.423	−.628	−.719
	(.194)	(.191)	(.340)	(.600)	(.600)	(.608)
Individual controls	No	Yes	Yes	No	Yes	Yes
Region controls	No	Yes	Yes	No	Yes	Yes
Partner controls	No	No	Yes	No	No	Yes
Adjusted R^2	.003	.024	.009	.009	.022	.023
N	39,34	39,007	30,352	30,794	30,774	30,352
RMSE	14.990	14.827	15.007	32.211	31.991	31.999
Mean (depvar)	2.306	2.305	2.326	11.885	11.870	11.894

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.

NOTE.—The sample includes adult females in 1999 and 2002. The dependent variable is a binary indicator (rescaled to 0–100) for self-reported abuse during the previous year (cols. 1–3) and for technical abuse (cols. 4–6). The post-period is 2002. The treatment group includes women who are either married or legally separated but not yet divorced. The control group includes women with partners during the previous year but who are not legally married. Individual control variables include age group dummies, education dummies, labor market status, dummies for marital status, a dummy for the presence of children, the number of children, immigration status, and dummies for religious beliefs. Region controls include region fixed effects and a dummy for urban residence. Partner controls include dummies for education and labor market status of the partner. Since partner variables refer to the current partner, including these controls (cols. 4 and 6) implies restricting the sample to women with partners at the time of the interview. RMSE = root-mean-square error; Mean (depvar) = mean of the dependent variable. The regressions are estimated by ordinary least squares. Robust standard errors are reported in parentheses.

*** $p < .01$.

Table A2
Impact on Technical Measures of Abuse: Alternative Definitions

	Dependent Variable: Measures of Technical Abuse						
	Number of Indicators of Abuse		Dummies for at Least n Indicators of Abuse ($n = 2 \ldots 6$)				
	OLS (1)	Poisson (2)	+2 Indicators (3)	+3 Indicators (4)	+4 Indicators (5)	+5 Indicators (6)	+6 Indicators (7)
Married × Post	−.074***	−.323***	−1.342***	−.771***	−.711***	−.438***	−.386***
	(.015)	(.119)	(.341)	(.260)	(.209)	(.165)	(.132)
Married	.010	.068	.419	.020	−.183	.118	.084
	(.036)	(.266)	(.832)	(.628)	(.538)	(.331)	(.323)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Partner controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	.018		.015	.010	.008	.006	.005
RMSE	.882		20.273	15.638	12.517	10.214	8.486
Mean (depvar)	.221	.221	4.361	2.535	1.605	1.061	.729

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.

NOTE.—N = 54,757. The sample includes adult females in 1999, 2002, and 2006 with partners at the time of the interview. In cols. 1–2, the dependent variable is a continuous variable for the number of indicators of abuse present for each individual. In cols. 3–7, the dependent variable is a dummy that takes the value 1 if at least n indicators of abuse are present (for $n = 2 \ldots 6$). The treatment group includes currently married women who were married at the moment of the reform in divorce legislation. The control group includes women with partners but who are not legally married. Individual control variables include age group dummies, education dummies, labor market status, dummies for marital status, a dummy for the presence of children, the number of children, dummies for religious beliefs. Region controls include region fixed effects and a dummy for urban residence. Partner controls include dummies for education and labor market status of the partner. All regressions include year dummies. RMSE = root-mean-square error; Mean (depvar) = mean of the dependent variable. Robust standard errors are reported in parentheses.

*** $p < .01$.

Table A3
Heterogeneous Impact by Presence of Young Children (Only Married Women)

	Dependent Variable	
	Self-Reported Abuse (1)	Technical Abuse (2)
Without young children × Post	−.621*	−1.298*
	(.355)	(.749)
Without young children	.639*	−.267
	(.331)	(.688)
Post	−.495*	−2.706***
	(.257)	(.553)
Individual controls	Yes	Yes
Year dummies	Yes	Yes
Region controls	Yes	Yes
Partner controls	Yes	Yes
Adjusted R^2	.004	.016

SOURCE.—N = 29,812. Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.

NOTE.—The sample includes married women between 30 and 60 years of age. The treatment group includes mothers of young children (under 18 years of age), while women either without children or with children older than 18 years of age are left in the control group. Dependent variables are dummy variables (rescaled to 0–100) for different measures of abuse. Self-reported abuse refers to the last 12 months, while technical abuse refers to the current situation. The control variables included in the regressions are age group dummies; education dummies; age, education, and labor market status of the husband; number of children; and region fixed effects. The regressions are estimated by ordinary least squares. Robust standard errors are reported in parentheses.

* $p < .10$.

*** $p < .01$.

Table A4
Heterogeneous Impacts by Education Level (Only Married Women)

	Dependent Variable			
	All Married Women		Married Women Aged 30–50	
	Self-Reported Abuse (1)	Technical Abuse (2)	Self-Reported Abuse (3)	Technical Abuse (4)
Intermediate education × Post	−.450	1.134	−1.088**	−.592
	(.329)	(.711)	(.541)	(1.209)
High education × Post	−.205	2.296***	−.621	.833
	(.433)	(.878)	(.619)	(1.331)
Intermediate education	.738**	−.379	.953**	.479
	(.310)	(.646)	(.417)	(.925)
High education	.786*	−2.034**	.936*	−1.282
	(.430)	(.832)	(.532)	(1.098)
Post	−.469*	−4.525***	.015	−2.890**
	(.264)	(.597)	(.495)	(1.132)
Adjusted R^2	.004	.015	.004	.014
N	40,535	40,535	20,741	20,741

SOURCE.—Author's calculations using the Survey of Violence against Women 1999, 2002, and 2006.

NOTE.—The sample includes all married women in cols. 1 and 2 and middle-aged women (i.e. 30–50 years, for whom their education level may be a more appropriate measure of opportunities outside of marriage) in cols. 3 and 4. Low education (omitted category) refers to women with primary school or less, intermediate education to women with high school, and high education to women with university degrees. Dependent variables are dummy variables (rescaled on a 0–100 basis) for different measures of abuse. Self-reported abuse refers to the last 12 months, while technical abuse refers to the current situation. The control variables included in the regressions are age group dummies; education dummies; age, education, and labor market status of the husband; number of children; and region fixed effects. The regressions are estimated by ordinary least squares. Robust standard errors are reported in parentheses.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

Table A5
Measures of Technical Abuse: Definitions and Frequencies

Definition of Technical Abuse			Classification According to Alberdi and Matas (2002)		
Indicator of Abuse	Mean	SD	Type of Abuse	Mean	SD
He insults or threatens you	.0125	(.1112)	Physical abuse	.0186	(.1351)
At times he frightens you	.0092	(.0957)			
He pushes or hits you when he's angry	.0061	(.0782)			
He insists on having sex even when he knows you don't want to	.0355	(.1849)	Sexual abuse	.0355	(.1849)
He prevents you from seeing your family or relating to friends and neighbors	.0123	(.1103)	Psychological abuse (control)	.0271	(.1623)
He takes the money you earn or does not give you what you need	.0036	(.0597)			
He decides what you can and cannot do	.0173	(.1304)			
He does not consider your needs	.0173	(.1306)	Psychological abuse (emotional mistreatment)	.0734	(.2609)
He tells you that you are not capable of anything without him	.0138	(.1168)			
He says everything you do is wrong, that you are clumsy	.0169	(.1287)			
He belittles or does not value your beliefs (religious, political, etc.)	.0132	(.1143)			
He does not value the work you do	.0434	(.2038)			
He demeans you in front of your children	.0212	(.1441)			
Technical abuse (combination of all 13 indicators of abuse above)	.1062	(.3081)			

NOTE.—The measure of technical abuse is based on a series of 13 questions included in the survey as indicators of abuse according to the opinions of experts. This part of the questionnaire was answered only by women who declared that they were in a relationship at the time of the survey, regardless of their marital status. For each indicator of abuse, there is information on the frequency of occurrence (i.e., frequently, sometimes, rarely, never) and on who is the offender. In this paper, I follow the criteria established by the Spanish Women's Institute when it published the data, that is, to consider a situation of intimate partner abuse exists when there is a positive response to the correspondent question, the situation occurs "frequently" or "sometimes," and the offender is the intimate partner. I also follow the classification of Alberdi and Matas (2002) of these 13 indicators of abuse into four categories: physical, sexual, and two forms of psychological abuse.

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