

# **Bargaining under Threats: The Effect of Joint Custody Laws on Intimate Partner Violence.**

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*We study the effect of a policy change that exogenously shifted bargaining power from mothers to fathers on intimate partner violence. We exploit a quasi-natural experiment based on a series of reforms in Spain that shifted the custody decision from being unilaterally determined by the mother to a joint decision, barring evidence of violence. We find that the policy led to a large and significant decrease in intimate partner violence, with the largest effects among couples in which the mother was more likely to seek sole custody before the policy change.*

**Keywords:** intimate partner violence, joint custody, divorce, household bargaining models

**JEL classification:** D13, J12, J13, I12, K36

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## I. Introduction

Intimate partner violence (IPV) affects a huge number of women worldwide, with prevalence close to one-third of women globally in their lifetime (World Health Organization, 2013). In Spain, according to the first European survey about gender violence carried out in 2012, 20% of all women who had a partner at the time of the interview report having experienced some form of physical, sexual or psychological abuse by an intimate partner at some point in their lifetime<sup>1</sup>, an incidence similar to the one found in other studies (Ruiz-Pérez et al, 2017)<sup>2</sup>. Not surprisingly, IPV is associated with significant economic costs, with an annual cost of roughly 16 billion Euros in the EU due to lost productivity, and health, medical and criminal justice costs (De Suremain, 2007)<sup>3</sup>.

In response to this unfortunate prevalence and associated costs, a substantial economic literature has emerged to identify factors which may affect gender-based violence. The literature has generally found that IPV against women declines with unilateral divorce (Stevenson and Wolfers, 2006; Brassiolo, 2016)<sup>4</sup> and as exogenous measures of women's bargaining power increases (Aizer, 2010, Anderberg et al, 2016); in contrast, Dee (2003) finds that unilateral divorce laws increase spousal homicides of husbands in states favoring husbands in the division of marital property, as women who face dire economic outcomes resort to violence.

In this paper, we examine the effects on domestic violence of the passage of joint custody laws in Spain, which effectively changed the custody decision upon divorce from a unilateral maternal choice to a joint decision in which joint custody could not be unilaterally blocked by the mother, barring evidence of domestic violence. We illustrate the potential channels through which the policy change may affect IPV by using a simple analytical framework in which men may use IPV as an implicit threat of violence upon divorce; the joint custody reform may reduce violence since it both conditions joint custody on male non-

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<sup>1</sup> The 2012 FRA EU-wide survey collected women's experiences of physical, sexual and psychological violence in 28 EU countries. See the details in <https://fra.europa.eu/en/publication/2014/violence-against-women-eu-wide-survey-main-results-report>

<sup>2</sup> Lifetime prevalence of IPV among women in the U.S. is similar at 29% (Black et al, 2011).

<sup>3</sup> Similarly, Peterson et al (2018) estimate the lifetime cost of IPV per female victim in the U.S. to be over \$100,000.

<sup>4</sup> In contrast, Hoehn-Velasco and Silverio-Murillo (2020) show no effect of unilateral divorce in Mexico.

violence and simultaneously improves male expected utility upon divorce, thereby reducing the incentive to use force to prevent divorce. Using survey and administrative data, we find that the policy significantly decreased domestic violence, with IPV falling by over 40%. Moreover, these effects are largest among couples more likely to divorce and in which the mother was more likely to seek sole custody before the policy change and therefore had the largest policy effects. We also find evidence suggesting a reduction of the number of female homicides committed by intimate partners after the joint custody reform. Our results are robust to several sensitivity tests and not affected by selection in or out of marriages or selection into parenthood.

Our results are consistent with Halla (2013)<sup>5</sup> and may explain a somewhat puzzling result from Brassiolo (2016)—the differing effects of unilateral divorce on domestic violence among parents vs. childless couples, with unilateral divorce leading to a decrease in IPV among childless couples and an increase in IPV among couples with children<sup>6</sup>. Our analytical framework illustrates that there may be non-monotonic and heterogeneous effects of female bargaining power on IPV. While increases in female bargaining have been shown to reduce domestic violence, in cases in which males' expected utility upon divorce fall to very low levels and no transfer is possible to prevent divorce, men may use domestic violence in an attempt to prevent divorce. Given that sole maternal custody was the norm in Spain at the time that unilateral divorce laws were passed, the increase in IPV among fathers who stood to lose custody of their children with unilateral divorce might plausibly be explained by the latter response.

Our framework suggests that the heterogeneous effects found by Brassiolo may occur because fathers facing unilateral divorce in a sole custody environment had more to lose than their childless counterparts. In contrast, the increase in fathers' expected utility upon divorce

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<sup>5</sup> Halla (2013) finds that joint custody laws in the US decreased IPV by 23% in states that passed pro joint custody laws between 1976 and 1984. The magnitude of the effect is remarkable given that the joint custody reforms analyzed by Halla had a relatively mild effect on the incidence of joint custody raising it depending on the specification by 7 to 10 percentage points 8 years after their implementation.

<sup>6</sup> Brassiolo finds that unilateral divorce leads to a statistically significant decrease in domestic violence among women without children. In contrast, for women with children the coefficient of unilateral divorce is large and positive, although imprecisely estimated as would be expected if there were heterogeneous responses to the treatment. Brassiolo interprets this difference to be due to smaller treatment effects of unilateral divorce for mothers.

with the introduction of joint custody laws and the corresponding increase in male bargaining power for non-violent fathers decrease domestic violence by directly linking the increase in bargaining power to non-violence and by increasing fathers' expected utility upon divorce, thereby reducing the incentive to attempt to prevent a divorce through violence. We also find evidence of strategic behavior by mothers, as reports of IPV to the judiciary—which preclude joint custody under the law—increase while mothers' survey reports of IPV and guilty verdicts by the judiciary decrease.

The paper is organized as follows. Section II illustrates the theoretically heterogeneous effects of a shift in child custody policy on intimate partner violence. Section III describes the institutional background and the policy used as our main identification strategy. Section IV describes the data used for the empirical analysis. In section V, we present the empirical specification and discuss the main results, and section VI concludes.

## **II. Joint Custody and IPV: Analytical Framework**

Given a group of couples with children, we think of the decision to divorce as a dynamic decision in which both partners evaluate their expected utility from remaining married versus their expected utility from dissolving the partnership in a given time period. We assume that each parent may derive utility from his or her share of household resources, time spent with children and partner-specific utility from the marriage (or match quality), and that these preferences may be heterogeneous. Since unilateral divorce had been instituted throughout Spain at the time of our analysis, couples remain married only if both partners expected utility in marriage is greater than their expected utility from divorce.

Given a shock in which one partner wishes to remain married when the other does not, s/he may offer a utility transfer (for example, in the form of a larger share of household resources) in an effort to induce his partner to remain married. However, even if one partner would prefer to stay married and would be willing to transfer a large share of his or her household resources, it is possible that the transfer that would avoid marital dissolution would be higher than existing marital resources. In cases in which father's expected utility upon divorce reaches extremely low levels and mothers' expected utility upon divorce is high so that no transfer exists that will prevent marital dissolution, then the father may attempt to

directly reduce the mother's expected utility upon divorce to very low levels relative her expected utility in marriage through the use of fear and intimidation.

Although several papers have shown a decrease in IPV with improved female bargaining power (Aizer, 2010, Anderberg et al, 2016), others have noted heterogeneous effects of changes in household bargaining power on violence, with low male bargaining power sometimes leading to violence or 'male backlash'. Hidrobo and Fernand (2013) look at the effects of cash transfers to women in Ecuador on domestic violence and find mixed effects; while the increase in bargaining power reduces domestic violence among much of the sample, it increases IPV among lower-educated couples in which the husband has less education than the wife. They posit that violence may increase in cases in which the husband has no credible outside option to use as a threat point. Similarly, Dee (2003) finds the strongest effects of unilateral divorce on spousal murders among those women whose outside options are worse due to unfavorable property division laws upon divorce. Consistent with heterogeneous responses to bargaining power and with male backlash theory, recent work looking at relative income changes in Spain finds that increases in female (male) income increases (decreases) violence (Alonso-Borrego and Carrasco, 2017; Tur-Prats, 2019; Arenas-Arroyo, Fernandez-Kranz and Nollenberger, 2020)

While much of the previous economic literature on domestic violence and marital policy has focused on the utility effects of domestic violence *within* marriage (see for example, Brassiolo, 2016), the health and criminology literature indicates that domestic violence is often used to signal that worse violence may be expected upon separation and divorce. A previous history of domestic violence is the biggest predictor of lethal spousal femicide (Campbell et al, 2007), and lethal domestic violence is most likely to occur immediately following a separation, often preceded by threats of violence if the spouse leaves (Wilson and Daly, 1993; Campbell et al, 2003). Moreover, since the loss of custody among fathers upon divorce has been shown to be associated with significantly worse measures of mental and health among men upon divorce (Umberson and Williams, 1993), men in unilateral divorce regimes without joint custody laws may have particularly strong incentives to use violence to prevent divorce.

Therefore, given the sole custody and unilateral divorce laws in place in our data before 2009, parents may have heterogeneous responses to a marital quality shock with respect to domestic violence. On the one hand, as found among childless couples in Brassiolo (2016), fathers may offer transfers (which may include ‘better behavior’ such as a reduction in violence) in an attempt to prevent divorce.<sup>7</sup> Consistent with this, Roff (2017) finds evidence of transfers, with fathers who face the loss of custody of their children upon divorce taking on a larger share of household work upon the passage of unilateral divorce laws. On the other hand, fathers may also attempt to directly reduce mother’s expected utility upon divorce via domestic violence and threats.<sup>8</sup>

Figures 1 and 2 illustrate the two heterogeneous reactions discussed above, letting  $\alpha$  be the father’s share of household resources consumed.<sup>9</sup> In figure 1, a transfer or share of resources exists that preserves the marriage, while figure 2 illustrates the case in which no transfer exists that will preserve the marriage, in which case some fathers may act out of desperation and attempt to use domestic violence to reduce the mother’s expected utility upon divorce to preserve the marriage; we view this as encompassing both violence with explicit threats and violence driven by desperation.<sup>10</sup> In this case, while IPV also reduces the mother’s expected utility in marriage, IPV with threats upon leaving is intended to signal proportionately worse expected utility and possibly death upon divorce.<sup>11</sup>

Now suppose that custody laws change so that mothers who were able to unilaterally prevent joint custody can no longer do so. In this case, since fathers’ choice set expands upon divorce while the choice set of mothers falls, fathers’ expected utility from divorce increases nonstrictly while mothers’ utility from divorce decreases (also nonstrictly). Since joint custody leads to a reduction in child support as compared to maternal sole custody, fathers

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<sup>7</sup> Tauchen et al. (1991) assume that males derive utility from violence. Our model is more general in the sense that some males may derive match quality from domestic violence given a range of preferences.

<sup>8</sup> Stevenson and Wolfers (2006) discusses a similar mechanism for why unilateral divorce may theoretically increase domestic violence.

<sup>9</sup> One could also think of  $\alpha$  as a more general type of utility transfer, which may include the amount of violence in the relationship.

<sup>10</sup> Of course, both transfers within marriage and domestic violence intended to prevent divorce through a reduction in maternal expected utility upon separation may occur concurrently. These figures are merely meant to be expository.

<sup>11</sup> See DeKeseredy (2007) for an ethnographic discussion of death threats during IPV that occurs during separation. Relevant quotations include “If you leave me, I will kill you” and “If I can’t have you, I’m gonna make it so nobody can”.

may prefer joint custody for two reasons: 1) the increase in time spent with children, and 2) the decrease in transfers paid to mothers upon divorce. Related to the last point, note that even if the total cost of child care for the father is not lower under joint custody, the fact that he will now have a more direct control over an important part of the resources that are spent on the child might be a sufficient reason to prefer joint custody over sole custody. Furthermore, asset allocation, such as the use of the marital house, are also dependent on the type of child custody. Similarly, mothers may prefer sole custody due to increased time with children and the higher child support associated with sole custody. Moreover, crucially, the policy change applied only to those fathers who do not engage in domestic violence; fathers who have been shown to be violent are not eligible for joint custody under the new policy. Therefore, the choice set expanded only for those fathers who are non-violent.

The above implies the following effects of a change from sole custody laws to joint custody laws on domestic violence on affected married couples:

1) Fathers in marriages in which a transfer existed that preserved the marriage under sole custody laws (Figure 1) have improved bargaining power given the improvement in their utility upon divorce and the reduction in mother's utility upon divorce. However, this improved bargaining position only occurs if the father does not engage in domestic violence, leading to a decreased incentive for domestic violence that is generated by conditioning the increase in bargaining power on non-violence. Figure 3 illustrates this improvement in fathers' bargaining power with joint custody laws on couples that remain married. Similarly, mothers have an incentive to prevent fathers' improved bargaining position by reporting IPV irrespective of whether domestic violence occurred to maintain their previous bargaining position.

2) Fathers who might have used domestic violence in an attempt to directly affect maternal expected utility upon divorce due to low expected utility upon divorce and the loss of their children (Figure 2) also have less incentive for violence. Since the policy change increases the utility of divorce for fathers and decreases it for mothers, fathers' bargaining power increases along with the probability that a transfer exists that will prevent marital dissolution. Moreover, since the choice set only expands for non-violent fathers, we may again expect to see a reduction in domestic violence generated by conditioning the increase in bargaining

power on non-violence. Figure 4 illustrates this shift to incentives among couples who remain married. As noted above, mothers who derive higher utility from sole custody also have an incentive to report IPV in a strategic attempt to avoid joint custody upon divorce.

3) In addition to the behavioral changes among couples who remain married outlined above, the introduction of joint custody laws may affect domestic violence through effects on divorce. In both of the above scenarios, the increase in males' expected utility upon divorce and corresponding decrease in females' expected utility will affect the composition of who initiates a divorce, with an increase in father-initiated divorces.<sup>12</sup> On the other hand, mothers' decrease in expected utility upon divorce may make them more reluctant to divorce and be more subject to IPV due to reduced divorce rates. Therefore, the exposure effect is theoretically ambiguous and depends on whether divorce rates increase or decrease due to the new policy.

4) Couples who were more likely to seek sole custody before the policy change will have larger behavioral responses to the policy change due to the larger change in expected utility upon divorce from the policy shift. Similarly, couples with a higher probability of being affected by the policy due to a higher probability of divorce should have larger behavioral effects.

Note that the above analysis is unable to separately identify the effects of the policy on IPV that are due to the shift to joint from sole custody alone as compared to the effects that occur because the policy conditions joint custody receipt on non-violence. While the move to joint custody increases fathers' expected utility upon divorce and therefore their bargaining power within marriage which may itself decrease violence if violence is driven by frustration or an attempt to prevent separation, the increase in divorced fathers' expected utility seen in Figures 3 and 4 only occurs for non-violent fathers. Moreover, there may be direct effects of conditioning joint custody on non-violence outside of a bargaining framework, since fathers' expected utility upon divorce only increases with non-violence.

While we are not able to separately identify the relative importance of the joint custody policy change on IPV that acts through changes in bargaining power and fathers'

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<sup>12</sup> In figures 3 and 4, this would occur if fathers' expected utility under divorce with joint custody was above his utility in marriage at all resource allocations.

attempt to preserve the relationship through threats as a separate channel from the non-violence condition and vice versa, two pieces of evidence suggest that the first mechanism likely plays an important role. For one, Brassiolo (2016) finds striking differences of the unilateral divorce reform *which had no condition of non-violence* on IPV for childless couples versus those with children. He finds a significant decrease of 0.85 percentage points in self-reported IPV among childless couples. However, among parents, the reform, which notably occurred in a maternal sole custody policy environment, led to *an increase* in self-reported IPV of 1.48 percentage points. The difference between these two estimates along with the relatively large variation in response to unilateral divorce among married parents is suggestive of heterogeneous and non-monotonic changes in bargaining power, since fathers faced a much larger loss of bargaining power with unilateral divorce under a sole custody regime relative to their childless counterparts. Moreover, as discussed further in section 5, we find limited effects of the policy on violence among fathers who are no longer in a relationship with the mother. These fathers still face the incentive to reduce violence due to a potential of loss of custody since the reform conditions on non-violence; however, these fathers had little incentive to use violence as a threat to prevent relationship dissolution given that the relationship had already ended.

Taken together, our framework implies three testable hypotheses: 1) Joint custody laws should decrease IPV since the reforms increase fathers' expected utility upon divorce and that increase is conditional on non-violence, 2) This decrease should be largest among those groups most affected by the reform—couples who have a higher probability of divorce and those in which the mother is more likely to seek sole custody, and 3) In cases in which mothers' utility from sole custody is higher than joint custody, women may behave strategically to maintain custody leading to an increase in reports of domestic violence with the reform.<sup>13</sup>

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<sup>13</sup> As previously discussed, the effects of the policy on divorce are theoretically ambiguous. Fernandez-Kranz and Nollenberger (2021) find no significant effects of the Spanish joint custody reform on overall divorce rates, although the incidence of contested divorces fell.

### **III. Institutional Background: the Spanish pro Joint Custody Reforms**

In this paper, our main identification strategy comes from pro-joint custody reforms that five Spanish regions passed between 2009 and 2011 and that increased the incidence of joint custody fourfold in just five years. These reforms affected not only married couples but included all couples with children under 18 years old.

In the original formulation of the Spanish Civil Code (CC), legal custody of children following marriage dissolutions was granted to both parents, but physical custody was granted exclusively to one, usually the mother. The unilateral divorce law of 2005 (Law 15/2005) started to allow for physical joint custody of children but only under mutual agreement of both parents (Article 92 of CC, sections 5 and 6). Otherwise, joint custody was granted only if the judge believed sole physical custody was contrary to the best interest of the child and after a favorable consultation report from the General Attorney (Article 92 of the CC, section 8). Not surprisingly, the 2005 law resulted in very few joint custody awards (fewer than 11% of total custody decisions in 2009, five years after its approval). It was in this context that between 2009 and 2011 5 regions passed pro-joint physical custody reforms. These regions represent approximately 38% of Spain's total population in 2015. The first region to exhibit a surge in rulings granting joint custody was Baleares in 2009; then Aragón passed a pro-joint custody law in 2010,<sup>14</sup> followed by Catalunya a few months later.<sup>15</sup> Then Comunidad Valenciana and Navarra passed their laws in 2011.<sup>16</sup> Although País Vasco did not reform its Civil Code until 2015,<sup>17</sup> we note a surge in joint custody rulings in 2011.

The reforms were implemented in two different ways. First, the pro-joint custody laws explicitly encouraged judges to grant joint physical custody even when one of the parents (usually the mother) opposed it. Second, the laws changed the criteria used by the Office of the General Attorney in custody-related disputes, with the new criteria following a more pro-joint custody approach. Catalunya, Aragón and Valencia followed the first approach, whereas Baleares and País Vasco followed the second. An important aspect of all

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<sup>14</sup> Law 2/2010 of May 26, 2010.

<sup>15</sup> Law 25/2010 of July 29, 2010.

<sup>16</sup> Navarra: Law 3/2011 of March 27, 2011. Valencia: Law 5/2011 of April 1, 2011.

<sup>17</sup> Law 7/2015 of June 30, 2015.

the reforms, without exception, is that joint custody may not be awarded to the father if a judge finds evidence of domestic violence.

Fernandez-Kranz and Nollenberger (2021) analyze the content of 180 rulings of contentious divorces and present strong evidence that the surges in rulings for joint custody observed in Baleares and País Vasco in 2009 and 2011 respectively, were exogenous and therefore can be considered as “de facto” reforms. That analysis showed an abrupt change in the guiding principles of court rulings in Baleares and País Vasco in 2009 and 2011, respectively. In contrast, the Appeal Court in Madrid granted joint custody in only about 5%-10% of the decisions during the same period, with a disagreement between the parents often cited as the only reason to deny joint custody. Importantly, that analysis shows that the new guiding principles in Baleares and País Vasco mimic the principles guiding the reforms in the neighboring regions of Catalunya and Aragón. The proximity of the reforming regions to each other also suggests that geography could be one factor explaining the passage of reforms. Importantly, this does not seem to be correlated with neither pre-reform trends in joint custody rates nor the outcome which is the focus of this paper: intimate partner violence.

These reforms had a significant impact on the process of dissolution of couples by increasing the incidence of joint custody after divorce from less than 11% of all breakups one year before the reforms to close to 40% five years later. Figure 5 shows the effects of the reform on joint custody before and after the pro-joint custody reforms. Before the passage of pro-joint custody laws, the average incidence of joint custody between treated and control regions are quite similar. However, immediately after, the incidence of joint custody starts to increase in the treated regions relative to the control regions, reaching a significant difference of 30 percentage points 5 years after the reforms. The policy change also seems to be exogenous to the regional socio-political context. As can be seen in Figure 6, joint custody reforms have been promoted by both right and left-oriented political parties. There is also no evidence that the reforms were instituted in an attempt to affect domestic violence. Rather, the stated motivation of the reforms was to promote a more balanced distribution of the time that the children will spend with each parent after divorce.<sup>18</sup>

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<sup>18</sup> For example, Law 2/2010 of Aragón, in its preamble, states the following: “*This law, responding to an important social demand, implies a change of the traditional scheme, by establishing joint physical custody*”

[place Figures 5 and 6 here]

#### IV. Data and Descriptive Statistics

We use three datasets for the empirical analysis: a nation-wide representative survey about IPV incidence (Survey on Violence Against Women); data on female homicide committed by their intimate partner; and statistics from the Spanish Judiciary about cases reported by the victims and decisions by specialized courts on IPV reports.

##### *4.1 Survey on Violence Against Women*

The Survey on Violence against Women is the only source providing information about IPV incidence for a nationally representative sample of adult women living in Spain. We pooled the cross-sectional microdata of all the surveys available: 1999, 2002, 2006, 2011 and 2015. These data include both self-assessment of IPV and objective criteria.<sup>19</sup> We use the responses to objective questions since self-assessed reporting tends to underestimate domestic violence. Women were asked whether during the last year they had been in any of 26 different situations that are related to domestic violence, including physical, sexual, psychological and economic violence. Thirteen out of these twenty six questions are considered *strong* indicators of abuse, whereas the other thirteen are considered *weak* indicators of abuse (Alberdi and Matas, 2002). The surveys also include information at the individual level on the respondent's (and her partner) demographic characteristics, labor market status, educational background, and household composition.

The 1999, 2002 and 2006 waves were carried out by the Spanish Women's Institute in 1998, 2001 and 2005, and were conducted by telephone (sample sizes 20,552, 20,652 and 28,423, respectively). Since 2011, these surveys have been handled by the Spanish Government Representation Department for Gender-Based Violence with the survey collected by female interviewers in the interviewee's homes. This change implied that the

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*versus individual custody as the preferential rule in cases of rupture of coexistence between parents and in the absence of a family relations pact. This change is intended to favor the best interest of the child and to promote the equality between parents."*

<sup>19</sup> The self-assessment is based on a single question asking each woman whether they think they have been subject to abuse during the past 12 months. The objective criteria are a set of situations that are considered by experts to be strong indicators of abuse. Each woman in the survey is asked whether she has been or not in any of those situations during the past 12 months. See Appendix Table A1 for the objective criteria measures.

sample size decreases to 7,898 and 10,171 in 2011 and 2015 respectively. This methodological change may affect the analysis of trends on IPV at a national level. However, it is unlikely to affect comparisons between regions and groups of women, as this paper does, since all regions and groups should have been affected in a similar way by the methodological change. In the results section we show that differences in IPV between treated and control groups follow a similar trend in the pre-reform period, which includes the 2011 survey, which was carried out in 2010.

The shift to the survey collection method also led to some changes in the way some questions about IPV were asked. In particular, some questions about forms of psychological abuse (like personal belittling) are not asked in a consistent manner across surveys. For this reason, our analysis is based on the 7, out of 13, questions that are considered to be strong indicators of abuse and that were asked in a relatively consistent manner across all surveys. Appendix table A1 shows the list of the seven indicators and the corresponding questions in each of the waves of the survey. We include all the strong indicators of physical and sexual abuse, and some indicators of psychological abuse (those about economic or personal control). In the robustness tests section, we show that our results hold when we use the wider spectrum of 13 indicators.

We restrict our sample to all women of non-immigrant origin who report having a partner for at least 5 years, the length of our analysis, and who are younger than 50 at the time of the interview. We also examine an alternative sample in our analysis in which we include all women with a partner at the time of the policy change, including those women who are no longer partnered in order to examine whether the policy change affected IPV primarily through a reduction in IPV within existing relationships or by causing the dissolution of relationships with IPV. Our sample excludes immigrant women because we cannot ascertain whether they married outside of Spain and therefore would not be affected by the Spanish legislation in case of divorce. Our final sample contains 27,757 observations.

Table 1 summarizes the main characteristics of the women and their partners included in our sample by survey. As can be seen, the sample composition in terms of the main observable characteristics is in general quite similar across surveys, despite the reduction in the sample size after 2011. However, there are some compositional changes to point out. The

proportion of women under 39 and under 29 in particular are lower after 2011, as is the proportion of married women. While we do not have an explanation for the first change, the second one is consistent with the dramatic decrease in the marriage rate between 2006 and 2011 (the number of marriages decreases from 4.5 to 3.5 per 1000 inhabitants between those years). There is also an increase of around 10 percentage points in the proportion of employed women after 2011, which has the counterpart in a similar decrease in the proportion of partners employed. This compositional change is likely explained by the differential effect of the Great Recession on women and men employment. There is also a steady decrease in women who have less than a high school degree over time. In the results section, we show that our results are not sensitive to the inclusion of demographic characteristics of women and their partners, which validates the use of repeated of cross-sectional data in spite of the aforementioned compositional changes.

#### ***4.2 Female Homicides by Intimate Partner***

The Government Office on Gender-based Violence provides information monthly on the victims of lethal intimate partner violence by region. We use data from 2006 to 2016 at Autonomous Community level (187 observations) to assess the impact of pro-joint custody laws on extreme violence. There were on average 61 female homicides committed by their intimate partner per year between 2006 and 2016, which means 3 lethal victims of intimate partner violence per million women in Spain.

The data have information about the age of the victim but not on their motherhood status. Given that pro-joint custody laws affect couples with minors, we restrict the analysis to victims aged between 21 and 49 years old. The victims in this range of age represent 71% of all victims (43 victims per year on average between 2006 and 2016). The data are disaggregated by victim-perpetrator relationship: 73% of intimate partner homicides were committed by the current partner, while the other 27% were committed by former partners. Among female homicides committed by the *current* partner, 26% were committed by separating partners. As with the case of non-extreme violence, we focus the analysis on *within* marriage violence and estimate the effect of pro-joint custody laws on female homicides by current partners. However, we also estimate the effect of the law on extreme violence committed by former partners. This analysis is useful in order to check the extent to

which the effect of the reform on the IPV within marriage can be explained by compositional changes of marriage and divorced couples.

#### *4.3 Statistics from the Spanish Judiciary*

Our next data source is administrative data from the Spanish courts, which were created when the Integral Act of 2004 instituted specialized courts for gender-based violence and documented official records of all reported cases of gender-based crimes.<sup>20</sup> We use this data to gather official records of IPV by each province beginning in 2007, by which time the specialized courts were more established and widespread throughout the territory allowing us to develop consistent information on IPV by province.<sup>21</sup> We work with province level data to increase the number of observations per region. Note that Spain is formed by 17 regions, which comprise a total of 52 provinces. Of these 52 provinces we exclude the autonomous cities of Ceuta and Melilla in Africa due to their extremely small sample sizes. We use the official records by province from 2007 to 2014 for the following variables: number of cases of IPV reported by the victim, number of reported cases withdrawn by the victims, sentences issued by the specialized courts with a guilty verdict, number of cases dismissed by the specialized courts or with a non-guilty verdict. Data on reporting allow us to look for evidence of women's strategic behavior after the passage of joint custody laws (remember that only non-violent fathers can apply for joint custody), while data on sentences allow us to check, using administrative data, the reliability of the results on non-extreme violence based on survey data.

The victims can report cases of abuse either directly to the specialized courts or they may report IPV to the police, in which case the report is referred to the specialized court. There were 5 reports made by the victim per 1,000 female inhabitants on average during 2007

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<sup>20</sup> The Integral Act (officially known as the Organic Act 1/2004 on Integrated Protection Measures against Gender Violence) came into force on June 28th 2005 and establishes comprehensive and multi-disciplinary measures including measures aimed at fostering awareness and prevention for potential victims, increasing the availability of resources for victims, and augmenting sanctions for aggressors.

<sup>21</sup> On 28th June 2005 with the enforcement of the Integral Act, 17 new specialist Courts of Violence against Women were established. By the beginning of 2008, 83 Examining Magistrate's Courts were exclusively specialized for matters—criminal and civil-related to gender violence in the whole country. Another 375 Examining Magistrate's Courts deal with matters related to gender violence, but not exclusively. Their jurisdiction authority extends as well to general criminal matters in 18 Courts and to general criminal and civil matters in 357 Courts (de la Fuente Méndez, 2008).

and 2014. Reports made directly by the victim represent 80% of all reports of domestic violence. On average, around 15% of the reports of intimate partner violence made by the victims were withdrawn by them. Among all cases for which the specialized courts made a final decision, 17% (or 0.65 per 1,000 female inhabitants) received a guilty verdict, while 65% were dismissed or with non-guilty verdict.<sup>22</sup>

#### ***4.4 Divorce-related data***

To measure the impact of joint custody laws on the divorce rate, we use official records of each divorce every year and aggregate them at the province-level<sup>23</sup>. Annual records of nullity, divorces, and separations are collected by the General Council of the Judiciary and compiled by the Spanish National Statistical Institute. To estimate populations at the province level, we use microdata from the Spanish Labour Force Survey (LFS; second quarter). This quarterly survey, representative of the Spanish population at the province level, offers detailed socio-demographic information, so we can estimate the relevant subpopulation group in each case (e.g., total, married, unmarried, female population, subpopulations by age).

We calculate province-level marital dissolution rates (hereafter, divorce rate), equal to the number of divorces and legal separations per 1,000 of the total married or cohabitating population. We include legal separations because in Spain, legal custody rules are the same for married or cohabitating couples with dependent children. We use province-level data from 2007 to 2016 (500 observations); this microdata is only available since 2007. In turn, we can calculate group-specific divorce rates that are relevant for our analysis (e.g., who was the plaintiff and whether divorces are consensual or not).

## **V. Empirical Specification and Results**

### ***5.1 Non-extreme violence: Analysis of the Survey Data on IPV***

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<sup>22</sup> Some cases of extreme violence have to be referred to the Criminal Court or Provincial courts for prosecution (around 20% of all reports) and others remain without decision (around 10%) due to the overload of the specialized courts. Notice also that the number of reported cases are always higher than the number of sentences issued as one woman can report IPV more than once.

<sup>23</sup> We work with province level data to increase the number of observations per region. Recall that Spain is formed by 17 regions, which comprise a total of 52 provinces. Of these 52 provinces we exclude the autonomous cities of Ceuta and Melilla in Africa due to their extremely small sample sizes.

### 5.1.1 Empirical Specification

As already mentioned, our identification strategy relies on the pro-joint custody reforms that five Spanish regions passed between 2009 and 2011. Because equal parenting time after divorce is relevant for couples with minors but not for those without minors, our empirical approach examines whether there are systematic differences in the evolution of IPV between couples with and without minors in treated versus control regions when the reforms passed. More precisely, we estimate the following equation using a probit model:

$$DV_{igt} = \alpha_0 + \alpha_1 Minors_g + \alpha_2 (Minors_g \cdot Post_t) + \alpha_3 (Minors_g \cdot Treat_j) + \alpha_4 (Minors_g \cdot Treat_j \cdot Post_t) + \alpha_5 (Post_t \cdot Treat_j) + X'Y + \tau + \varphi + u_{igt}, \quad (1)$$

Where  $DV_{igt}$  is our measure of domestic violence for individual  $i$ , in couple type  $g$ , in region  $j$ , and year  $t$ ;  $Minors_g$  is an indicator of the couple type (with or without minors);  $Post_t$  is a binary indicator for the post reform period;  $Treat_j$  is a binary indicator for the group of treated regions; and  $\tau$  and  $\varphi$  are time and region fixed effects, respectively. Our triple difference estimator and coefficient of interest is therefore  $\alpha_4$ .

Our treatment group then consists of partnered women with children (aged 18 or less) who live in treated regions. To avoid the possibility that the results are driven by changes in partner formation due to changes in the type of couples who match together as a result of the joint custody laws, the analyses focuses on couples that have been together for at least five years and therefore were ‘surprised’ by the reforms.<sup>24</sup> In the robustness section we consider two other layers of selection: selection out of marriage (divorce) and selection into parenthood. We provide evidence suggesting that our results are not affected by these types of selection.

Our measure of IPV is equivalent to the one used by Brassiolo (2016) and is based on a series of questions referring to situations and behaviors considered by experts as strong indicators of mistreatment. Our IPV variable is a binary variable that takes value 1 if any of these indicators occurs “frequently” or “sometimes” (the other options are “rarely” or

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<sup>24</sup> This restriction is sufficient to ensure that we only have couples ‘surprised’ by the policy change since the last year we have data is 2014 and the earliest year of the reform is 2009.

“never”) and the offender is the intimate partner of the victim. This measure of abuse can further be disaggregated into three additional measures – physical, sexual and psychological. In the tables below we consider these more disaggregated measures of abuse and check whether our results are driven by a particular type of violence.

The vector  $X'$  includes a rich set of control variables that can affect the level of domestic violence and may also be correlated with the presence of minors in the household. It includes control variables for the woman’s age, whether the couple is married or cohabiting, the level of education of the woman and of the partner, and the employment status of the woman and the partner. We check the sensitivity of our results by changing the set of controls across different specifications.

Finally, in all tables we report robust standard errors clustered by state. Because of the reduced number of clusters (17), we also report the p-value of the coefficient of interest using Score bootstrapping. The significance of our results is barely affected by this choice.

Unfortunately, due to limited post-reform data in the Survey on Violence Against Women, we only have one time period after the reforms. However, as we show in section 5.3, our results are quite consistent with the results using administrative data from the Spanish Judiciary and with the analysis of intimate partner homicides, which has several years of data post-reform.

### **5.1.2 Results**

An essential assumption of the differences-in-differences approach is the parallel trends assumption. Figure 7 provides evidence supporting that this assumption is satisfied in our case.

[Place Figure 7 here]

The figure shows the evolution of the difference in our measure of abuse between couples with and without minors in treated and control regions from the pre-reform period (1998, 2001, 2005 and 2010) through 2014. As we discussed in the legal framework section, while some regions passed their joint custody reform in 2010, the effects of the reform become noticeable one or two years later as the incidence of joint custody increases and the implications of this new policy became more evident to the society at large. As can be seen

in the figure, the difference in the incidence of IPV between couples with and without minors is very similar between the control and treated regions and moves in parallel around an average value of 0.015, which implies that women living with minors suffer a 1.5 percentage points higher incidence of IPV than women in couples without minors. After the implementation of the reforms the control regions continue around the same trend as before but treated regions experience a significant drop in the incidence of IPV, resulting in less IPV in couples with minors relative to those without children in regions that experienced the policy reform. As a result of this change women with children go from being more at risk of being victims of IPV to be less at risk, compared to women without children.

Table 2 shows the marginal effects of estimating equation (1) using probit regressions. The results are largely consistent with the evidence displayed in Figure 2. Column 1 shows the triple difference estimator in a specification that includes only the variable of interest (and the relevant interactions) plus region, year and age controls. The coefficient points to a significant decrease of the incidence of IPV for treated women after the reform by 2.6 percentage points (43.3% of the sample average). Column 2 includes also marital status controls, whereas columns 3 to 5 add controls for the woman's characteristics (education and employment status), those of her partner and year dummies interacted with region, respectively. In all the cases the effect remains negative, significant and extremely close in magnitude. Throughout the paper, we call the specification in column 4 our preferred specification. As previously discussed, column (6) adds to the sample women that separated or divorced from their previous partner less than five years ago and remained single until the date of the interview to capture the extent to which the reduction in IPV with joint custody laws is driven by a decrease in the level of exposure to violent partners. The results in column (6) are similar to the previous ones, with the joint custody law decreasing IPV by 33.3% (-2.0 percentage points out of an average value of 4.8). This suggests that the 'exposure' effect is not a crucial part of our story and cannot explain the significant reduction of IPV caused by the joint custody laws.

[Place Table 2 here]

Our results are in line with those reported in previous studies. For example, Halla (2013) finds that joint custody laws in the US decreased IPV by 23% in reform states between

1976 and 1984. The magnitude of the effect is remarkable given that the joint custody reforms analyzed by Halla (2013) had a relatively mild effect on the incidence of joint custody raising it depending on the specification by 7 to 10 percentage points 8 years after their implementation. Note that the Spanish reforms that we analyze increased joint custody by 30 percentage points in only five years. Also, we study a set of laws that enforce equal parenting time after divorce (that is, 50/50 time with each parent) and condition joint custody to the absence of domestic violence. In contrast, the US reforms analyzed by Halla (2013) were a mix of pro joint *legal* and joint *physical* custody laws, with no explicit mention in many cases of a non-IPV conditionality. So, in many respects, the Spanish laws are stricter and potentially more impactful on IPV than the ones studied by Halla (2013). As for Brassiolo (2016), he not only finds large effects of divorce laws on IPV but very heterogeneous effects across two groups of women: with and without children. More precisely, he finds that the 2005 Spanish unilateral divorce law *decreased* IPV against childless women between 43% and 51%, depending on the measure of abuse (self-reported or technical). Instead, he finds that the same law *increased* IPV against mothers between 0.9% and 49%, depending again on the measure of abuse, although in this case the effects are imprecisely estimated and not statistically significant. In any case, Brassiolo's opposite result for mothers (that unilateral divorce led to an increase in IPV against mothers), suggests that some fathers might use IPV when desperate as they face the possibility of not only losing their wife but also the custody of their children. In contrast to Brassiolo (2016), we analyze a set of laws, joint custody laws, that target more specifically the issue of child custody besides conditioning on non-IPV. This could explain why we find not only large impacts consistent with Brassiolo's results but statistically significant ones.<sup>25</sup> Finally, it is worth mentioning that the magnitude of the economic effect depends on the choice of the baseline incidence of abuse with impacts ranging from 35.6% to the reported 43% depending on the choice of the period and group for comparison.<sup>26</sup>

Our analytical framework suggests that the decrease in domestic violence with pro-joint custody laws should occur through a reduction in men's temporary use of IPV in an

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<sup>25</sup> Both results are consistent with each other on the basis that the unilateral divorce law grants more bargaining power to women who want divorce while the joint custody laws reduce their bargaining power.

<sup>26</sup> Throughout the paper we use women with small children pre-reform as the baseline group for comparison.

attempt to prevent divorce and/or secure custody of their children, as opposed to a reduction in chronic levels of violence in the relationship. While we cannot directly identify this in our data, there is some evidence that the policy reduced acute and temporary violence. The 2011 survey asks women about the timing of violence in their relationship; 40% of women respond that the abuse did not exist at the beginning of the relationship but started less than 5 years ago, with 14% saying it has been occurring only since the last year.<sup>27</sup>

As explained in Section 2, there are two possible explanations for the decline in IPV after the implementation of the joint custody laws: a lower level of father's frustration in the event of divorce (or a higher level of expected utility upon divorce with joint custody) and the non-IPV condition of the joint custody laws. Unfortunately, the data does not allow us to distinguish between the two explanations. However, there is some evidence suggesting that the main mechanism is a lower level of father's frustration rather than the non-IPV condition. First, the fact that Brassiolo (2016) finds an increase in IPV against mothers after the Spanish unilateral divorce law (which did not condition on IPV) which contrasted with his results for non-parents suggests that some fathers use IPV when desperate. Second, as shown in column 6 of Table 2, when we add the sample of women with an ex-partner we find smaller, not larger, effects. Since ex-partners still face the loss of custody with violence with the policy but they don't face the 'leaving' mechanism, this suggests that the use of violence to prevent spousal separation in the face of low expected utility upon divorce is an important factor in our results. Similarly, Figure 9 indicates that the policy leads to a reduction in extreme violence only among the group with a current partner and not among the group with an ex-partner. Of course, there may be other differences between the two groups such as differences in custody preferences that cause differential responses; as such, we view this evidence as merely suggestive.

To test the robustness of the previous results, column 7 shows the difference-in-difference estimator using only the sample of treated regions. In that specification we simply compare the evolution of IPV for women in couples with minors to couples without minors, before and after the reform, and therefore the coefficient of interest is  $\alpha_2$ . The estimated effect is almost identical to the one in column 4 which suggests that our triple difference

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<sup>27</sup> Note that women in our sample have been together with the same partner for more than 5 years.

estimator is capturing the fact that only treated regions deviated from the pre-reform trend after the reforms took place whereas control regions continue around the previous trend. Column 8 reinforces this idea and serves as our first placebo test. In this column we estimate the same difference-in-difference specification but now using only the sample of women in non-treated regions. As expected, the estimated coefficient is close to 0 and non-significant. Finally, column 9 runs the second placebo test, which is also a test of the parallel trends assumption. In this specification, we estimate equation (1) but now comparing two subperiods of the pre-reform period: 2005-2010 vs. 1991-2001, that is, assuming that a “fake” reform took place in 2005. Consistent with parallel trends assumption, the estimated coefficient is close to zero and non-significant.

We turn now to the results in Table 3. In that table we estimate our preferred specification for three different measures of abuse: sexual, physical and psychological. In all cases we find a negative effect of the joint custody laws across all three types of abuse, an effect that is statistically significant in the cases of physical and psychological, but not sexual. The impacts range from 50% in the case of physical abuse to 48.5% in the case of psychological abuse. The magnitude of the effect for sexual abuse is also large (-48.5%), but as mentioned before, not statistically significant.

[Place Table 3 here]

#### ***5.1.2.1 Heterogeneity Analysis by the Level of Education of the Woman and her Employment Status***

As discussed in the analytical framework section, the intensity of the treatment may vary with the likelihood that the couple would pursue joint custody. Preceding the reforms, women held *de facto* a veto power on the type of custody that was awarded in the event of a divorce. The lower opportunity cost of time with children for non-working and less-educated women as well as the relative importance of child support for them (which is generally only awarded in sole custody cases) led to lower rates of joint custody among these groups prior to the reforms. As a result, we may expect to see larger policy effects of allowing men to choose joint custody among this group and a correspondingly larger decrease in IPV for women of low levels of education and non-employed compared to the other groups of

women. Of key relevance for this hypothesis, there is evidence of no positive relationship between education and divorce in Spain (Bernardi and Martinez-Pastor 2011).<sup>28</sup>

[Place Table 4 here]

We start with the heterogeneity analysis by level of education in Table 4. The results in that table indicate that the decrease of IPV brought about by the joint custody laws is driven by women of a low level of education. In the second column of panel (a) of Table 4 we see that joint custody decreases all types of abuse by 3.3 percentage points (52.4% of the sample average, significant at the 10%) in the case of women with secondary education or less, but has a non-significant effect in the case of women with more than secondary education (panel (b), column 2). We find a similar contrast in the case of non-sexual abuse, shown in column 1 of the table. Further splitting the sample by the level of education of the partner changes the magnitude of the estimated coefficients very little although they are less precisely estimated and become insignificant if the partner also has less education.

Table 5 tells a similar story but now with respect to the employment status of the woman. We find that the reduction of all types of abuse is driven by non-working women, with a 4.3 percentage points decline in IPV (69% of the sample average) shown in panel (b) of column 1. In contrast, working women experience a non-significant decrease of all types of domestic violence of 0.9 percentage points (panel (a), column 2). Again, the contrast is similar if we now focus on non-sexual abuse and when we split the sample by the employment status of the man. For example, in the case of couples in which the woman does not work but the man does, IPV falls by 4.6 percentage points, whereas when neither partner works, IPV falls by 4.2 percentage points.

[Place Table 5 here]

#### ***5.1.2.2. Heterogeneity Analysis by Age Group and Type of Province***

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<sup>28</sup> If wife's level of education affects the probability of divorce, it would also affect the probability of being victims of threats of violence to prevent divorce with ambiguous results.

In Table 6 we show the results of separate regressions by age group and type of province. The objective of this analysis is to check whether the effects of JC laws on IPV are larger among those groups that have been more affected by the reforms.

[Place Table 6 here]

Columns 1 and 2 show the analysis by splitting the sample in two age groups, younger than 30 and 30 or older. The objective of this analysis is to see if the effects of JC laws on IPV are larger among couples that have a higher probability of breaking up. Given that joint custody laws are particularly relevant in the event of a divorce, we would expect to see larger effects among couples subject to a higher risk of divorce. Using data from the Spanish Council of the Judiciary Power, we calculated divorce rates among couples of different ages and find a jump when the woman is 30 years of age or older. For example, whereas the divorce and separation rate among couples with children is 8.5 per 1,000 women aged 18 to 29 that rate increase to 13.5 for women aged 30 to 49.<sup>29 30</sup> As expected, column 1 in the table shows that the reduction of IPV due to the JC laws is much larger among the group of older women, aged 30 to 49 years old (-3.1 percentage points or -56.4%, significant at the 5% level), and compared to women 18 to 29 years old (-1.2 percentage points or -37.5%, non-significant).

The next two columns show the results of splitting the sample in two groups of provinces: ‘low take-up’ provinces and ‘high take-up’ provinces. We define ‘low take-up’ (‘high take-up’) provinces as those provinces that had a joint custody take-up rate below (above) the nation’s median of 7.4% across all provinces before the reforms in 2009.<sup>31</sup> There are several reasons that could explain the differences across provinces in joint custody take-up rates. For example, two-earner couples with kids are 5 percentage points higher in the ‘high take-up’ than in the ‘low take-up’ provinces (55% versus 50%), and two-earner couples have a higher tendency to have joint custody. As Figure 8 shows, the median joint custody take-up rates varied significantly across provinces in 2009, ranging from 5% in ‘low take-

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<sup>29</sup> To calculate these rates we use population data from the Spanish Labor Force Survey to compute the stock of married women with children at each age group.

<sup>30</sup> We focus on these age brackets because these are the age groups specified in the IPV questionnaires: 18 to 29, 30 to 39 and 40 to 49. We find very similar divorce probabilities for the last two age groups.

<sup>31</sup> Of the 50 provinces, 35 are control provinces of which 19 are ‘low take-up’ provinces, and 15 are treated provinces of which 6 are ‘low take-up’ provinces.

up' control provinces to 12% in 'high take-up' treated ones. More importantly, between 2009 and 2014 take-up rates increased the most in treated provinces and especially in those that started off from a low JC take-up rate. Indeed, JC take-up rates increased 25 percentage points in 'low take-up' treated provinces compared to 5-6 percentage points in control provinces and 18 percentage points in 'high take-up' treated provinces. Hence, in light of these differences one would expect to see larger effects of the pro-joint custody laws on IPV on 'low take-up' treated provinces since these are the provinces that have been more affected by the reforms.

[Place Figure 8 here]

The evidence presented in columns 3 and 4 of Table 6 confirms our hypothesis. Column 3 in the table shows that as a result of the pro-joint custody reforms IPV decreased 3.7 percentage points (75.5%, significant at the 1% level) in 'low take-up' treated provinces, whereas column 4 shows a much smaller decline of 1.8 percentage points (34.6%, non-significant) in 'high take-up' provinces.

### ***5.1.2.3. Robustness Tests and Selection Issues***

In this section we perform several robustness tests and discuss issues of selection bias and how we addressed them. We consider three potential layers of selection into treatment: selection into marriage, selection out of marriage (divorce), and selection into parenthood.

Our strategy throughout the paper to deal with the first layer of selection (selection into marriage) has been to limit our sample to couples that have been together for at least five years (i.e., couples 'surprised' by the law). In column 5 of Table 7 we undo this restriction and add to the sample couples that have been together for less than five years. Because these additional couples were not 'surprised' by the reforms we should expect to see smaller effects, since the new legal environment may affect who marries whom as well as expectations about transfers going into marriage which may imply a smaller shock from the legal change. This is indeed what we find, as the decrease in IPV falls to only 1.8 percentage points (35% of the sample average) and is only significant at the 10% level.

With respect to the selection out of marriage (divorce), the concern is that the reduction of IPV that we find among stable couples is due to a compositional effect driven

by an increase of the dissolution rate of violent couples.<sup>32</sup> Fernandez-Kranz and Nollenberger (2021) show that joint custody laws decrease divorce rates among couples with minors in comparison with couples with no minors, but the effect is not statistically significant at conventional levels. They also show that the share of contentious divorces among couples with minors decreases, which may reflect a more balanced distribution of bargaining power between men and women when the couple dissolves. In addition, they find that among those divorces in which one of the spouses acts as plaintiff, the share of wife-initiated divorces decreases after the reform passed. Overall, their findings are reassuring and alleviates the concern that our results are driven by the dissolution of violent marriages. Just to the contrary, if anything, these results suggest that our results might underestimate the true effect of the reforms by making women more resistant to leave a violent marriage.

To address the potential selection into parenthood, in column 8 of Table 7 we show the results for the sample of women 40 years old or more. Since the average age of first childbirth in Spain was 30 at the time of the 2015 survey, women aged 40 or more would have had their first child before the new laws were implemented. Ideally, we would want to impose a restriction on the minimum age of the youngest child, but, unfortunately, we do not have this information (we only know whether there are children younger than 18 in the household).<sup>33</sup> The results in column 9 continue to show a large and significant decrease of domestic violence, with the coefficient increasing to -3.8 percentage points (a 59% decrease).

The remaining columns of table 7 show additional robustness tests. In column 2 we show the results when we use survey weights in our regressions. The results are practically identical to the ones from our main specification. In column 3, we estimate equation 1 using as the dependent variable the full 13 strong indicators of abuse, and we find very similar effects, with a reduction of IPV still quite large in magnitude (-38.4%) and statistically

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<sup>32</sup> It should be noted that in general, there is no evidence of a clear effect of joint custody laws on divorce rates. Fernández Kranz and Nollenberger (2021), estimate the effects of the same Spanish joint custody laws on several family outcomes, including divorce rates. They do not find any significant effect on overall divorce rates, although they find that the new custody laws reduced contentious divorces and women-initiated divorces. Halla (2013) studies the custody reforms of the U.S. and finds no clear evidence of an effect on divorce rates.

<sup>33</sup> Recall that age comes in 10 year intervals: 18-29; 30-39 and 40-49.

significant<sup>34</sup>. In column 4 of the table we show the results when we exclude from the sample those women with an ex-partner. We estimate this sensitivity test to make sure that our results are not driven by confounding factors related to abuse from an ex-partner or to rule out any influence of the existence of an ex-partner on the level of abuse by the current partner. The magnitude of the effect increases from 2.6 to 3.0 percentage points and the economic effect now grows from 43% to 55%, with the growth in economic effects driven by both larger coefficient estimates as well as higher average levels of IPV among women with an ex-partner.

[Place Table 7 here]

Column 6 of the table drops 2010 as this is the year of the reform for some regions. The effect of this change is imperceptible as all estimated coefficients remain almost identical to the ones in column 1. An alternative to this robustness test is shown in column 7, where the variable of interest is dynamic as it indicates the number of years since the reforms were passed in the different regions, with that variable taking value 2 for Balears in 2010 and value 1 for Catalunya and Aragón in 2010. The estimated effect of column 7 (-0.06) must be interpreted as the effect per year since the law was passed. That effect is statistically significant and implies the same reduction in IPV as our preferred specification estimate four years after the law was passed. Finally, column 9 shows the results of our main specification after dropping the employment controls, which might be endogenous to the policy. The results are identical to those in column 1.

## ***5.2 Extreme violence: Analysis of Female homicides by Intimate Partner***

### ***5.2.1 Empirical Specification***

As with the analysis of the survey data on non-extreme IPV, our identification strategy for the effects on lethal violence relies on the pro-joint custody reforms that five Spanish regions passed between 2009 and 2011. In this case, however, we do not have information about the presence of children. Therefore, we conduct the analysis using the annual series of

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<sup>34</sup> Recall that our main specification includes only 7 of the full 13 indicators due to changes over time in the questionnaire's wording for some indicators.

female homicides by region for all women aged between 20 and 50 and estimate the following DiD dynamic specification:

$$DV_{jt} = \alpha_0 + \sum_r \alpha_r \cdot JC_{jt}^r + \tau + \varphi + u_{jt}, \quad (2)$$

Where  $DV_{jt}$  is our outcome of interest related to intimate partner homicides in region  $j$ , and year  $t$ ;  $JC_{jt}^r$  is a series of indicator variables equal to one if the region  $j$  has introduced a joint custody reform  $r$  years ago; and  $\tau$  and  $\varphi$  are time and region fixed effects, respectively. Our difference-in-difference estimators and coefficient of interest are therefore  $\alpha_r$ .

We estimate equation (2) using two alternative dependent variables: the number of female homicides and the female homicides rate, defined as the number of homicides per 100,000 female inhabitants, and carry out the analyses separately depending on who committed the crime, a current or a former partner. Although the focus of our analysis is the effect of pro-joint custody laws on domestic violence *within* marriage, the analysis of female homicides by former partners can help us to check if the decrease in IPV may be explained by changes in composition of couples who remain married after the law (exposure effect).

In the context of our framework, joint custody laws may affect spousal homicide if a male's perception of utility upon divorce reaches extremely low levels (i.e., desperation) and yet he is unable (or believes himself to be unable) to prevent separation using IPV due to imperfect information (for example, his partner underestimates the threat). Joint custody may also affect spousal homicide since lethal violence may be an unintended consequence of IPV.

### 5.2.2 Results

The results (including leads) are displayed in Figure 9. The figure depicts the difference between treated and control regions before and after the introduction of pro-joint custody laws, after removing group specific pre-trends and time and region fixed effects. We show the estimated coefficients for a set of dummy variables in linear regressions capturing the number of years before and after the reform as well as the 5% confidence intervals, with standard errors clustered at the region level. Because we do not know whether the victim has children, we perform the analysis at the region level and restrict the sample to women aged between 20 and 50 years. Panel A and B show the results of female homicides committed by current and former partners, respectively.

[Place Figure 9 here]

Consistent with the decrease in non-extreme violence found in the previous section, Panel A of Figure 9 suggests a decrease in the number of female homicides by current intimate partner in treated regions, relative to control regions, after the approval of the joint custody laws. The effect is statistically significant 3-4 years after the reform and grows over time. Specifically, we find that 5 years after the reform the number of victims decreases by 0.2 or 8% of the mean.

The results in Panel B shows that female homicides committed by former partners were not affected by the reform, which helps to rule out that the decrease in IPV within marriage may be explained by an exposure effect.

### ***5.3 Analysis of the Reports by the Victim and Decisions by Specialized Courts***

#### ***5.3.1 Empirical Specification***

Like in the analysis of homicides, data from the Spanish courts on IPV reports do not include information about the presence of children. Therefore, we conduct the analysis for all women and estimate the same dynamic DiD specification presented in equation 2. In this case, the dependent variables are related to IPV reports and judiciary decisions in region  $j$ , and year  $t$ .

The effect of joint custody laws on the intensity of police reports of IPV is a priori ambiguous. On the one hand, we may expect to see less reporting of IPV to the police due to the reduction in IPV that occurred with the reforms. On the other hand, we could also see an increase in IPV reporting to the courts, since the new laws establish that joint custody cannot be awarded if the father is found guilty in an IPV case, creating an incentive to report IPV among for mothers who wish to maintain sole custody. This increase in reporting activity could reflect a higher willingness to report true cases of abuse but may also be part of a strategic behavior by mothers in situations in which IPV does not exist.

#### ***5.3.2 Results***

Figure 10 shows the results of estimating equation (2), including leads. Each panel in the figure shows the difference in reporting activity between treated and control regions

before and after the introduction of JC laws after removing group specific pre-trends and time and region fixed effects. The data comes from the official records from the Spanish Judiciary and gives the number of reported cases as well as the decisions by the specialized courts between 2007 and 2014 in each Spanish region. Because it is not possible to know whether the reporting victim has small children or women's age, we perform the analysis on the full sample of women at the region level, which means that our estimates are probably a lower bound estimates of the true effects of the laws.

[Place Figure 10 here]

The figure shows the estimated coefficients for a set of dummy variables in linear regressions capturing the number of years before and after the reform as well as the 5% confidence intervals, with standard errors clustered at the region level. Panel A, shows the number of cases reported to the police by the victim, defined as number of cases per 100,000 female inhabitants. Panel B displays the proportion of complaints withdrawn by the victim as a percentage of all cases reported. Panel C shows guilty verdicts based on the sentences issued by the specialized court on gender violence per 100,000 female inhabitants. Finally, panel D displays the proportion of cases dismissed or with a non-guilty verdict as a percentage of all cases for which the specialized court made a final decision.

Panel A in Figure 9 shows an increase of reporting activity in treated regions, relative to control regions, after the approval of the joint custody laws. However, the effect is statistically significant only 2-3 years after the reform and falls in magnitude and significance in the fourth year post reform. The increase reaches a maximum value of 0.3 (5% of the sample average) three years after the reform. Panel B, shows that women in treated regions have a much lower tendency to withdraw a previously presented report to the police. This might reflect the fact that under the new laws women have more incentive for the complaint to go forward. The effects are highly significant in the years post reform and they grow in time, reaching a maximum of 15 percentage points 4 years after the implementation of the new laws, indicating that women in treated regions may have increased incentive for the complaint to move forward due to the ability to maintain custody in treated regions if the court finds the father has been violent.

We turn now to panels c and d which show the decisions by specialized courts on domestic violence. Consistent with our results indicating a reduction in IPV with the reforms, panel C indicates that a lower proportion of reported cases end in a guilty verdict and panel d shows that a bigger proportion of reported cases end up being either dismissed by the judge or with a non-guilty verdict. In both cases the effects are highly significant and grow with the number of years since the passing of the new laws. For example, according to Panel C, four years after the implementation of the JC laws the proportion of reported IPV cases that end in a guilty verdict decreases 0.22 points (or 31% of the sample average), a significant effect at the 5% level. Also, the proportion of reported IPV cases that end in either dismissal or in a non-guilty verdict significantly increases 0.15 points (or 24% of the sample average) four years after the reform.

All in all, the evidence in Figure 10 points to a strategic response by women in regions with pro joint custody laws, showing a propensity to report more IPV cases, many of which end in either a non-guilty verdict or are simply dismissed by courts because of a lack of sufficient evidence of IPV. Furthermore, the increased probability of a non-guilty verdict is consistent with our previous finding of less IPV after the implementation of JC laws.

## **VI. Conclusions**

This paper studies the effects on domestic violence of the passage of joint custody laws in Spain, which effectively changed the custody decision upon divorce from a unilateral maternal choice to a joint decision in which joint custody could not be unilaterally blocked by the mother, barring evidence of domestic violence.

We find that the policy significantly decreased domestic violence. Survey data indicates that IPV falls by almost 50% after the policy change. The results are robust to different specifications, adjustment of the standard errors, definition of the dependent variable and different samples. The effects are largest among couples more likely to divorce and in which the mother was more likely to seek sole custody before the policy change and therefore had the largest policy effects. We also find evidence of a significant reduction of the number of female homicides committed by the current intimate partners after the reform. Administrative data on sentences from specialized courts also indicates a decrease in IPV. However, we find evidence of more police reports by victims of intimate partner violence.

We interpret this evidence as part of a strategic behavior by mothers that want to retain sole custody of their children.

Our analysis indicates that joint custody laws upon partnership dissolution may decrease IPV through two channels: 1) the direct effect of the law's stipulation that joint custody is barred in cases of domestic violence, and 2) fathers' lessened incentives to threaten violence as a desperate means of preventing divorce. While our data cannot directly identify which of the above two factors drive our results, Brassiolo's results (2016), which find that unilateral divorce decreases IPV among childless couples but increases it among those with children, indicates that the second mechanism may play some role, as some fathers use IPV to prevent divorce and the loss of their children.

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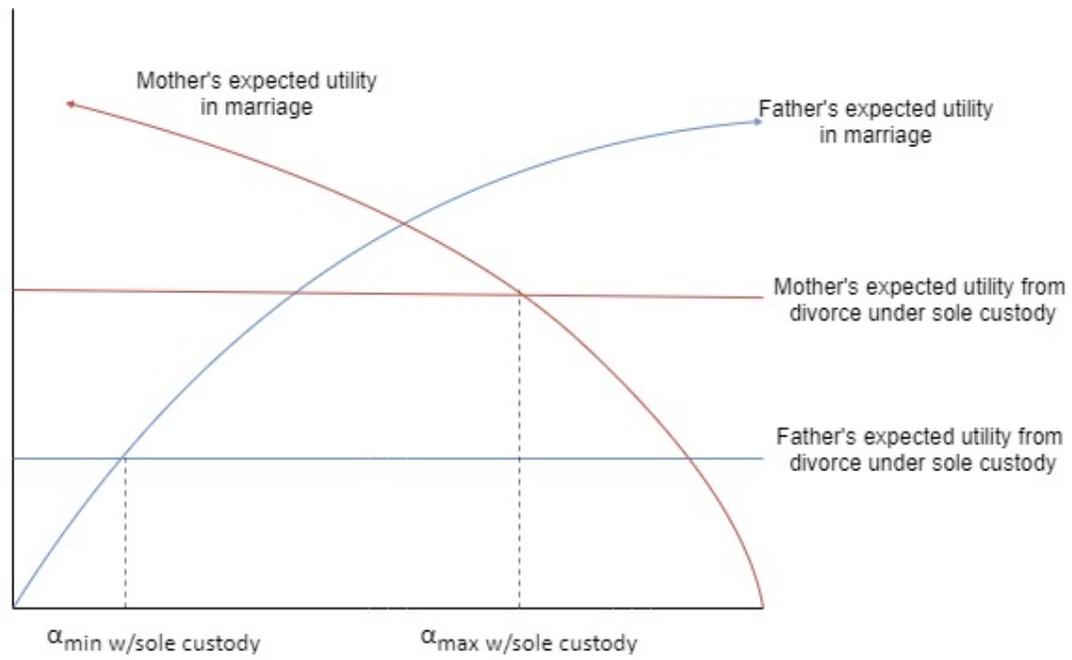
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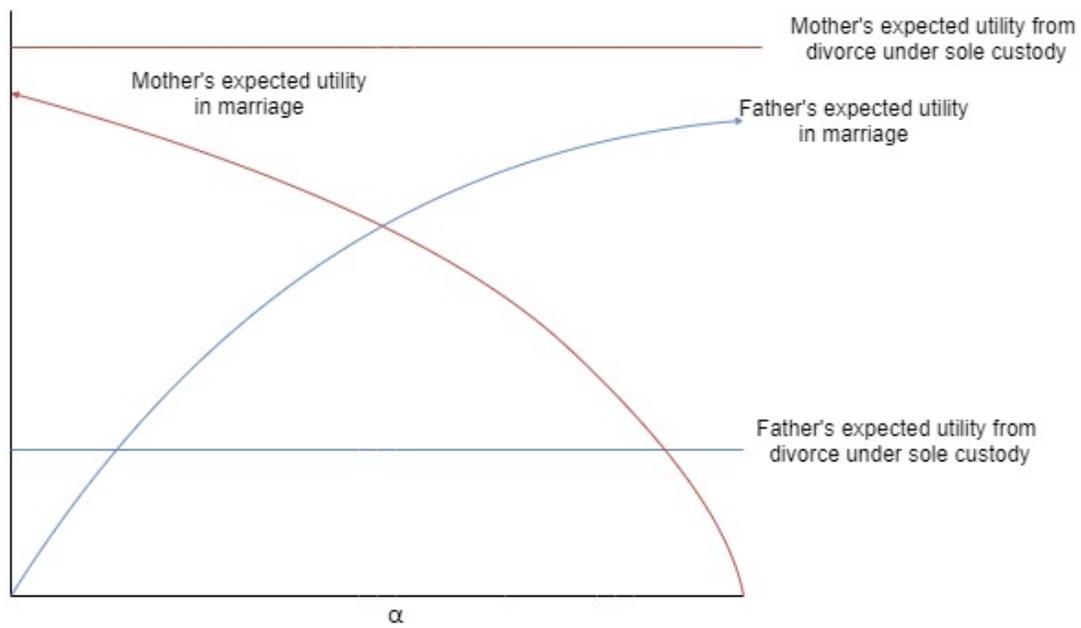
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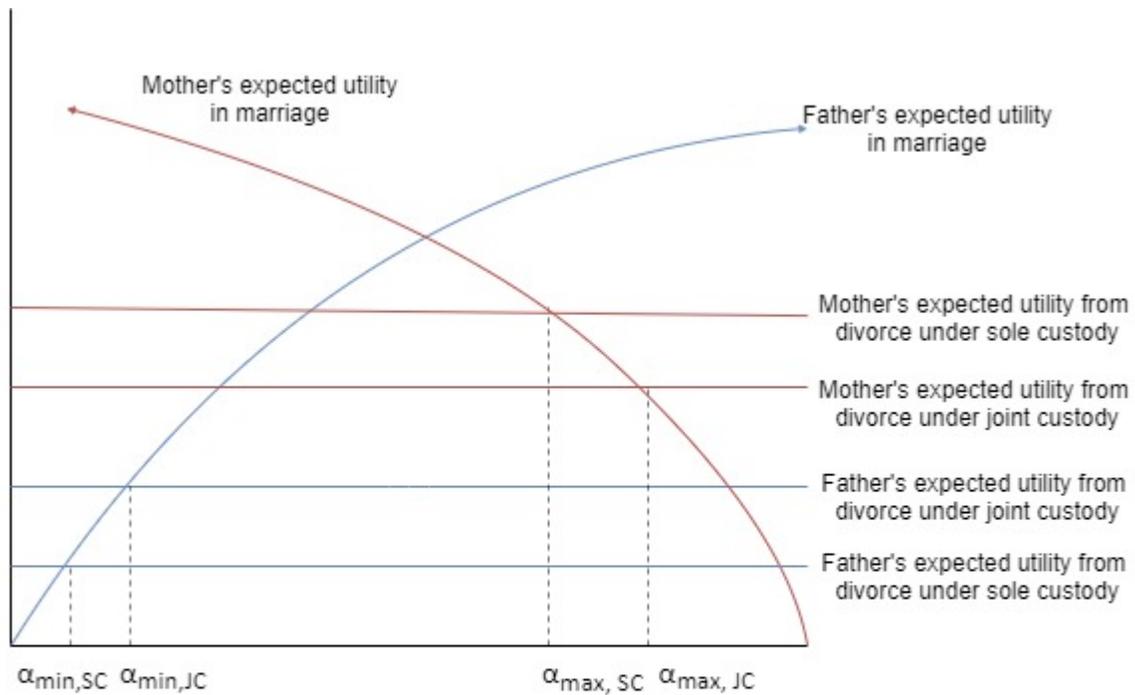
**Figure 1: Case in which transfer exists to preserve marriage with sole custody policy environment**

Notes:  $\alpha$  represents a transfer of household resources between 0 and 1 with paternal receipt of all resources when  $\alpha=1$ . A value of  $\alpha$  between  $\alpha_{\min}$  and  $\alpha_{\max}$  preserves the marriage.



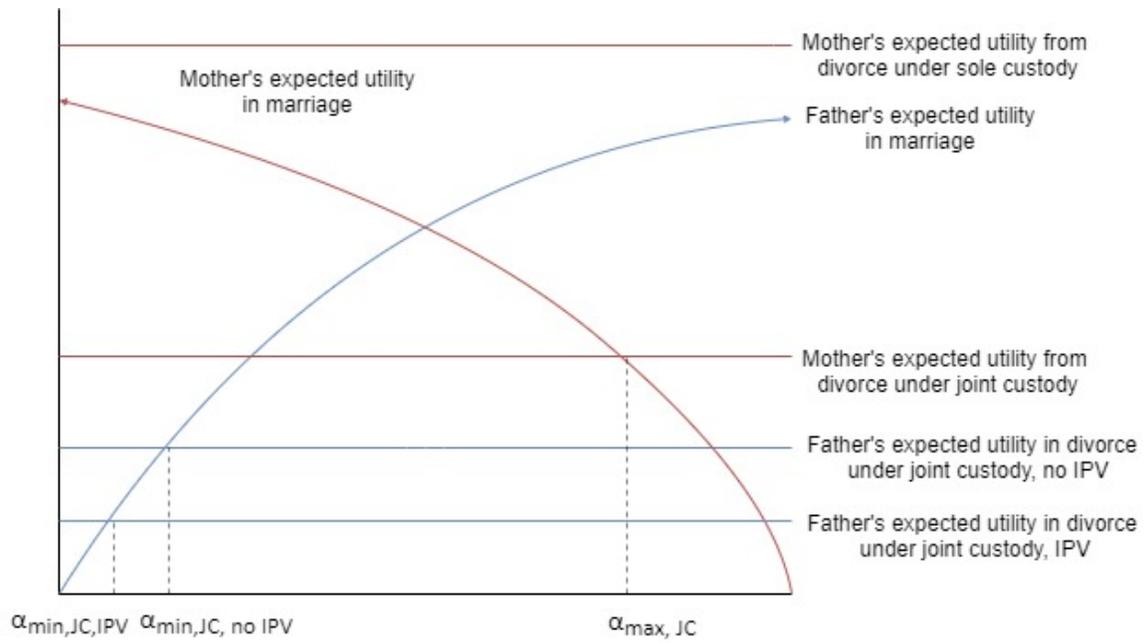
**Figure 2:** Case in which no transfer exists to preserve marriage with sole custody policy environment

*Notes:*  $\alpha$  represents a transfer of household resources between 0 and 1 with paternal receipt of all resources when  $\alpha = 1$ .



**Figure 3: Case in which transfer exists to preserve marriage under sole custody, with the introduction of joint custody policy**

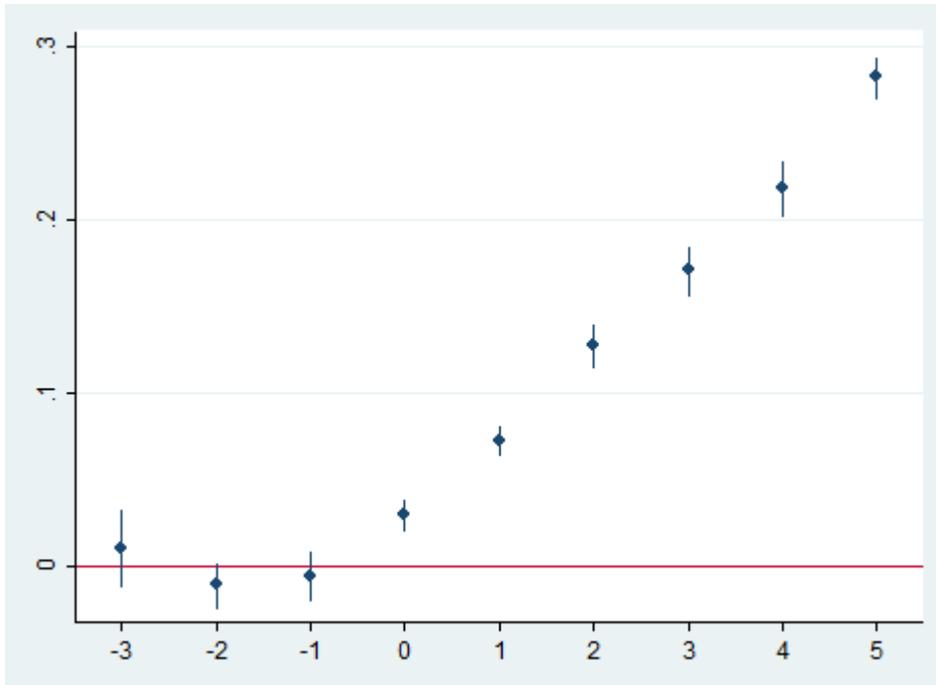
Notes:  $\alpha$  represents a transfer of household resources between 0 and 1 with paternal receipt of all resources when  $\alpha=1$ . A value of  $\alpha$  between  $\alpha_{min}$  and  $\alpha_{max}$  preserves the marriage. Joint custody law increases fathers' share of household resources,  $\alpha$ .



**Figure 4: Case in which no transfer exists to preserve marriage in sole custody, with the introduction of joint custody policy**

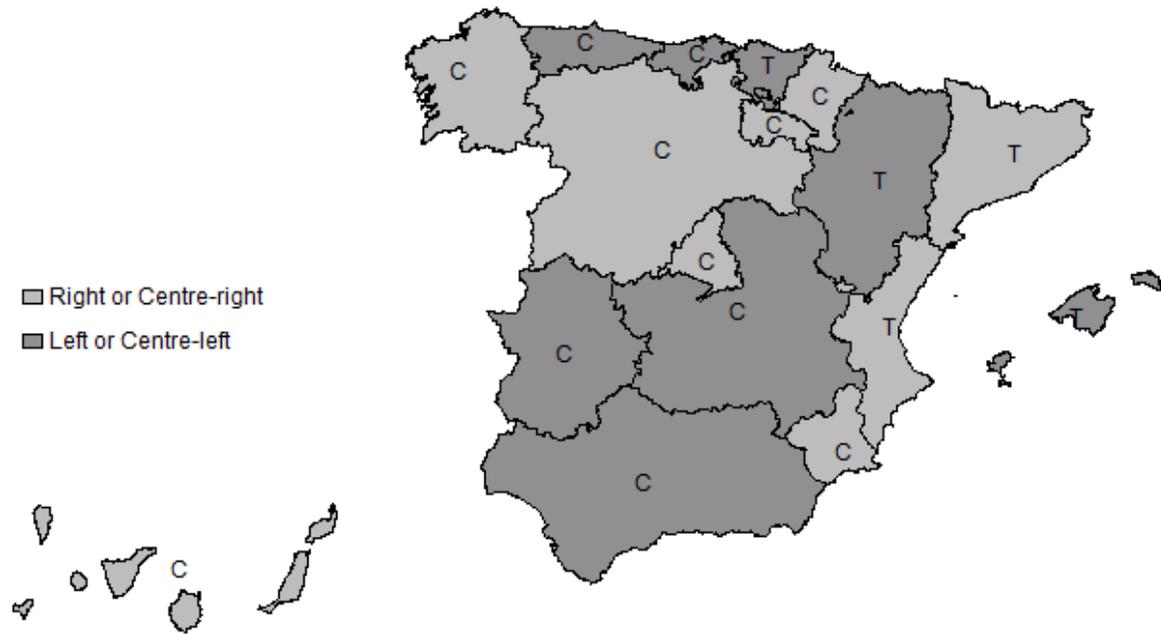
Notes:  $\alpha$  represents a transfer of household resources between 0 and 1 with paternal receipt of all resources when  $\alpha=1$ . A value of  $\alpha$  between  $\alpha_{\min}$  and  $\alpha_{\max}$  preserves the marriage.

Joint custody law increases fathers' share of household resources,  $\alpha$ .



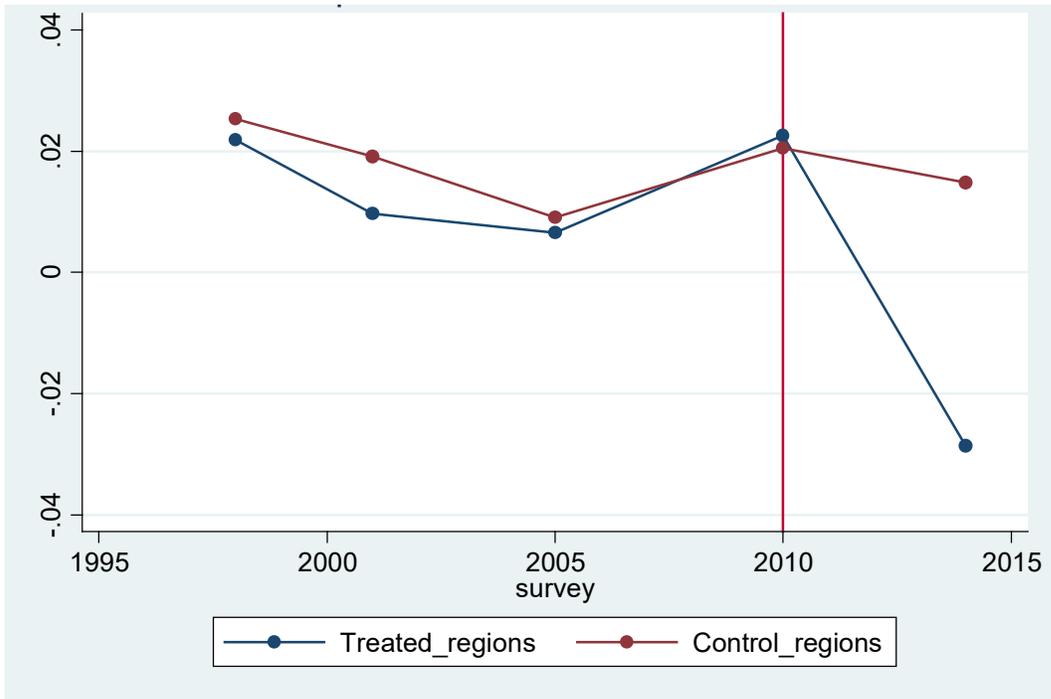
**Figure 5. Rulings granting Joint Custody as a percentage of all divorce rulings: difference between treated and control regions**

*Notes:* Authors' calculations based on data from the Spanish General Council of the Judicial Power. Data available at [www.ine.es](http://www.ine.es). The figure shows the difference between treated and control groups before and after the pro joint custody reforms after removing group specific pre-trends and time and region fixed effects. The figure shows the estimated coefficients for the set of years before and after the reform dummies and the 5% confidence intervals, with standard errors clustered at the region level. Data about rulings granting joint custody are available from 2007, so the third year before the reform does not include Balears, whose treatment starts in 2009.



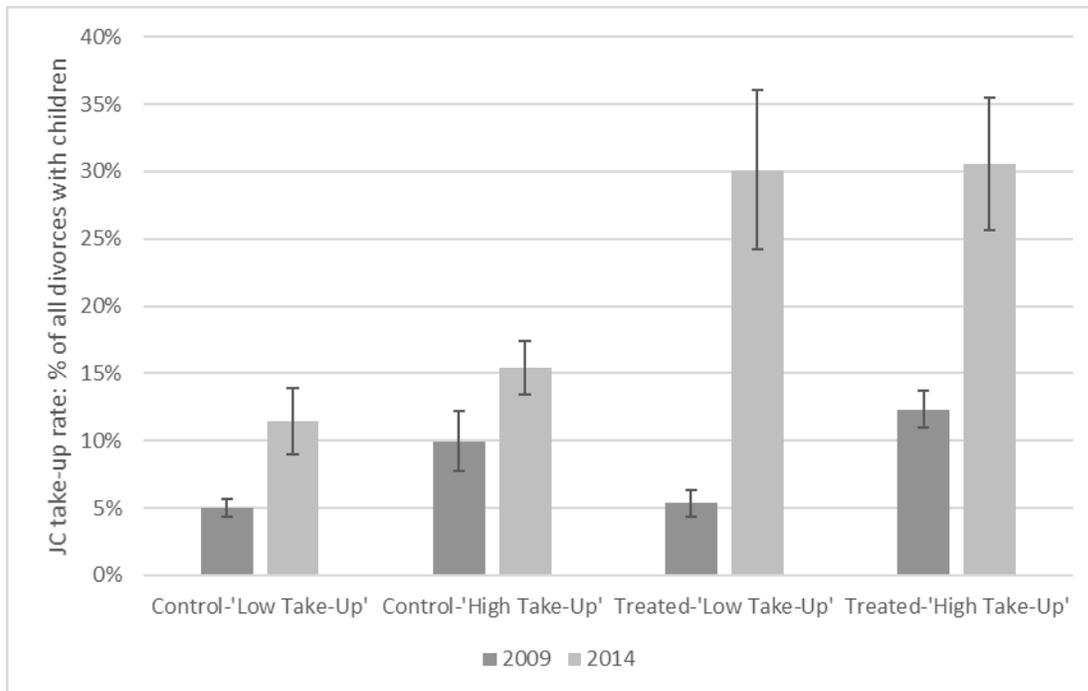
**Figure 6. Political orientation of the regional government parties in the years around the reforms**

*Notes:* T are the treated regions and C are the control regions. For the treatment regions, the figure displays the political orientation of the party that was governing at the time of the pro joint custody reform (2009 in Baleares, 2010 in Catalunya and Aragón and 2011 in Valencia and País Vasco). For the control regions, the figure displays the political orientation of the parties governing in 2009 and 2010.



**Figure 7. Difference in Non-extreme Violence when Minors are and are not Present: Treated versus Control Regions**

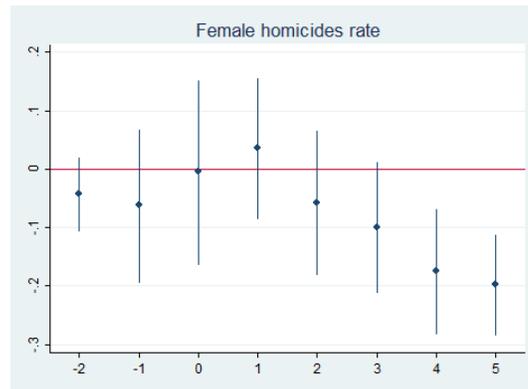
*Notes:* The figure shows the evolution of the difference in technical abuse when minors are and are not present, in treated and control regions. The sample includes all women of non-immigrant origin who declare to have a partner for at least five years and who are younger than 50 at the time of the interview. The dependent variable is a binary variable indicating whether the woman was subject to abuse, where the variable takes value 1 if the woman answers “sometimes” or “often” to any of the different types of abuse. Treated regions are: Aragón, Catalunya, Valencia, Balears and País Vasco. Microdata from the Survey of Violence Against Women, waves 1999, 2002, 2006, 2011 and 2015 (reference years: 1998, 2001, 2005, 2010 and 2014).



**Figure 8. Joint Custody Take-Up rates by Group of Provinces: 2009-2014**

Source: Spanish General Council of the Judicial Power. Data available at [www.ine.es](http://www.ine.es). The take-up rate is the % of all divorces with a child custody decision in which the physical custody was awarded jointly to the father and the mother. 'Low Take-Up' ('High Take-Up') provinces are provinces that in 2009 had a joint custody take-up rate below (above) the median across all provinces, which was 7.4%. The figure displays the median values across groups of provinces and the 95% confidence intervals.

Panel A. Committed by the current intimate partner

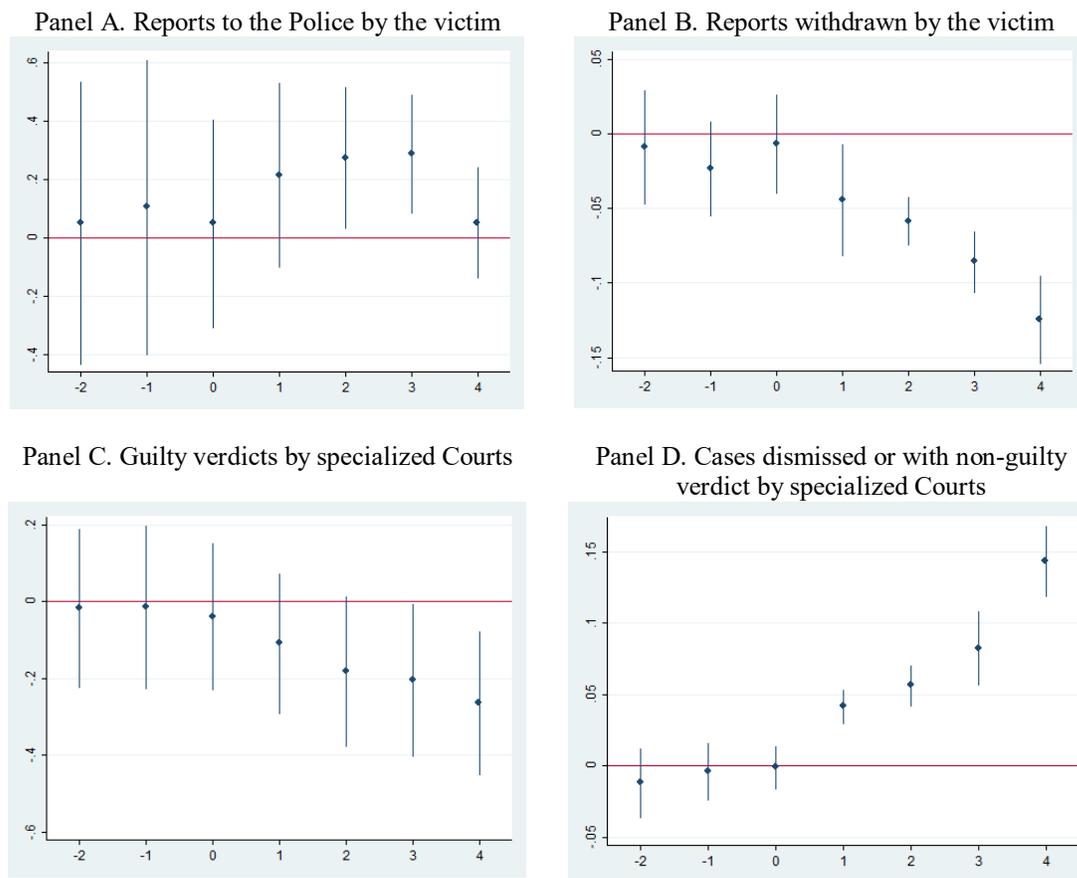


Panel B. Committed by a former intimate partner



**Figure 9. Extreme Violence: Female Homicides by Intimate Partners**

*Source:* Records from the Government Office on Gender-based violence. The figures show the difference between treated and control regions before and after the introduction of pro-joint custody laws after removing group specific pre-trends and time and region fixed effects. They display the estimated coefficients for the set of years before and after the reform dummies and the 5% confidence intervals, with standard errors clustered at the region level. In each panel, the graph uses as dependent variable the homicides rate defined as the number of female homicides per 100,000 female population aged between 21 and 49 years.



**Figure 10. Intimate Partner Violence: Police Reports by the Victim and Verdicts by Courts**

*Source:* Statistics from the Spanish Judiciary. The figures show the difference between treated and control groups before and after the introduction of joint custody laws after removing group specific pre-trends and time and region fixed effects. The figure shows the estimated coefficients for the set of years before and after the reform dummies and the 5% confidence intervals, with standard errors clustered at the region level. In Panel A, the cases reported to the police by the victim are defined per 100,000 female inhabitants. Panel B displays the proportion of complaints withdrawn over all cases reported by the victim. Panel C shows guilty verdicts based on the sentences issued by the specialized court on gender violence per 100,000 female inhabitants. Panel D displays the proportion of cases dismissed or absolved over the total cases for which the specialized court made a decision.

**Table 1.** Descriptive Statistics of the Sample Used in the Analysis. Survey on Violence against Women.

	Wave year									
	1999		2002		2006		2011		2015	
	Mean	St dev	Mean	St dev	Mean	St dev	Mean	St dev	Mean	St dev
<b>Age group</b>										
18-29	0.188	0.390	0.163	0.370	0.146	0.353	0.044	0.206	0.101	0.302
30-39	0.419	0.493	0.422	0.493	0.415	0.492	0.361	0.480	0.388	0.487
40-49	0.392	0.488	0.414	0.492	0.438	0.496	0.593	0.491	0.509	0.499
<b>Education of the woman</b>										
Less than high school	0.583	0.493	0.561	0.496	0.487	0.499	0.466	0.498	0.449	0.497
High school degree	0.221	0.414	0.241	0.427	0.257	0.437	0.239	0.427	0.246	0.431
More than high school	0.195	0.396	0.197	0.397	0.255	0.435	0.291	0.454	0.301	0.459
<b>Marital status</b>										
Married	0.865	0.341	0.862	0.344	0.847	0.359	0.751	0.432	0.744	0.436
Unmarried										
<b>Presence of children</b>										
Living with minors	0.702	0.456	0.685	0.464	0.665	0.471	0.696	0.459	0.741	0.437
Not minors in the hhld	0.297	0.456	0.314	0.464	0.333	0.471	0.303	0.459	0.258	0.437
<b>Employment status of the woman</b>										
Employed	0.449	0.497	0.458	0.498	0.563	0.496	0.639	0.480	0.621	0.485
Non-employed	0.550	0.497	0.541	0.498	0.436	0.496	0.360	0.480	0.378	0.485
<b>Education of the partner</b>										
Less than high school	0.555	0.496	0.547	0.497	0.489	0.499	0.537	0.498	0.546	0.497
High school degree	0.237	0.425	0.251	0.433	0.271	0.444	0.217	0.412	0.224	0.417
More than high school	0.195	0.396	0.189	0.392	0.230	0.421	0.228	0.420	0.221	0.415
<b>Employment status of the partner</b>										
Employed	0.934	0.247	0.950	0.217	0.944	0.229	0.857	0.349	0.834	0.371
Non-employed	0.065	0.247	0.049	0.217	0.055	0.229	0.142	0.349	0.165	0.371
<b>N. observations</b>	6,808		6,922		9,531		1,913		2,583	

**Table 2: Impact on Non-Extreme Violence**

	Dependent variable: Technical abuse (dummy)								
	2015 Vs. 1991-2010 (DiDiD)						Minors vs. non-minors in treated regions (DiD)	Minors vs. non- minors in control regions (DiD) (Placebo I)	2015- 2010 Vs. 1991- 2001 (Placebo II)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Minors * Treat*Post</i>	-0.026** (0.009)	-0.026** (0.009)	-0.026** (0.009)	-0.026** (0.009)	-0.026** (0.009)	-0.020** (0.006)			-0.003 (0.007)
<i>Score bootstrap p-value</i>	{0.06}	{0.06}	{0.06}	{0.06}	{0.06}	{0.04}	{0.12}	{0.96}	{0.63}
<i>Minors*Treat</i>	-0.003 (0.006)	-0.003 (0.006)	-0.003 (0.006)	-0.003 (0.005)	-0.003 (0.006)	-0.003 (0.005)			-0.001 (0.006)
<i>Minors*Post</i>	-0.003 (0.008)	-0.003 (0.008)	-0.001 (0.008)	-0.000 (0.008)	-0.006 (0.008)	0.013* (0.008)	-0.026*** (0.007)	0.000 (0.008)	-0.007 (0.006)
<i>Minors</i>	0.011*** (0.004)	0.012*** (0.006)	0.011*** (0.005)	0.012*** (0.003)	0.017** (0.007)	0.014*** (0.003)	0.012*** (0.003)	0.010** (0.004)	0.013** (0.005)
Mean dep. variable	0.060	0.060	0.060	0.060	0.060	0.048	0.051	0.060	0.060
Impact (%)	-43.3%	-43.3%	-43.3%	-43.3%	-43.3%	-33.3%	-50.9%	0.0%	-0.1%
N	27,744	27,744	27,744	27,744	27,744	32,355	8,830	18,914	25,161
Adj R2	0.015	0.015	0.024	0.029	0.029	0.040	0.024	0.032	0.030
Region and year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Age effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Marital status	NO	YES	YES	YES	YES	YES	YES	YES	YES
Woman controls	NO	NO	YES	YES	YES	YES	YES	YES	YES
Partner controls	NO	NO	NO	YES	YES	YES	YES	YES	YES
Year FE * region	NO	NO	NO	NO	YES	NO	NO	NO	NO

*Notes:* The table shows the marginal effects of the independent variable of interest in Probit regressions. Columns (1) to (6): DiDiD specification, comparing the difference in abuse when minors are and are not present in treated regions versus non-treated regions, and pre versus post reform. Column (7): DiD specification,

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comparing abuse when minors are and are not present in treated regions pre and post reform. In that specification, all observations are from treated regions, hence the coefficient of interest is that for the variable *Minors\*Post*. Column (8): Placebo I. DiD specification, comparing abuse when minors are and are not present in control regions pre and post reform. In that specification, all observations are non-treated, hence the coefficient of interest is that for the variable *Minors\*Post*. Column (98): Placebo II, implementing the DiDiD specification in the years before the reform. The sample includes all women of non-immigrant origin who declare to have a partner, since at least 5 years, and who are younger than 50 at the time of the interview. The dependent variable are binary variables indicating whether the woman was subject to abuse, where the variable takes value 1 if the woman answers “sometimes” or “often” to any type of abuse. The treatment group includes women with a partner and living in treated regions and with minors (aged 18 or less) in 2014. The control group includes women with a partner living in non-treated regions and those living in treated regions but without minors. Treated regions are: Aragón, Catalunya, Valencia, Balears and País Vasco. All models control for the presence of minors and its interaction with treatment and a post reform dummy and its interaction with treatment. Standard errors in parentheses are clustered at the region level (17 clusters). \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 Score bootstrap p-value of main coefficient in brackets. Source: Microdata from the Survey of Violence Against Women, waves 1999, 2002, 2006, 2011 and 2015 (reference years: 1998, 2001, 2005, 2010 and 2014).

**Table 3: Impact on Non-Extreme Violence by Type of Abuse**

	Non-sexual abuse			Sexual abuse
	All types of non-sexual (physical+psycho.)	Physical (Incl. threats)	Psychological (Control)	
	(1)	(2)	(3)	(4)
<i>Minors * Treat*Post</i>	-0.014** (0.005)	-0.007* (0.002)	-0.016** (0.003)	-0.017 (0.007)
<i>Score bootstrap p-value</i>	{0.04}	{0.09}	{0.13}	{0.19}
<i>Minors*Treat</i>	-0.004 (0.003)	-0.001 (0.002)	-0.003 (0.003)	0.002 (0.004)
<i>Minors*Post</i>	-0.000 (0.004)	-0.001 (0.003)	0.011 (0.014)	-0.010 (0.010)
<i>Minors</i>	0.007*** (0.002)	0.005*** (0.001)	0.005** (0.002)	0.007** (0.003)
Mean dep. variable	0.033	0.014	0.033	0.035
Impact (%)	-42.4%	-50.0%	-48.5%	-48.5%
N	27,744	27,744	27,744	27,744
Adj R2	0.038	0.073	0.022	0.040
Region and year FE	YES	YES	YES	YES
Age effects	YES	YES	YES	YES
Marital status	YES	YES	YES	YES
Woman controls	YES	YES	YES	YES
Partner controls	YES	YES	YES	YES
Year FE * region	NO	NO	NO	NO

Notes: The table shows the marginal effects of the independent variable of interest in Probit regressions. DiDiD specification, comparing the difference in abuse when minors are and are not present in treated regions versus non-treated regions, and pre versus post reform. The sample includes all women of non-immigrant origin who declare to have a partner, for at least five years, and who are younger than 50 at the time of the interview. The dependent variable are binary variables indicating whether the woman was subject to abuse, where the variable takes value 1 if the woman answers “sometimes” or “often” to any type of abuse. The treatment group includes women with a partner and living in treated regions and with minors (aged 18 or less) in 2014. The control group includes women with a partner living in non-treated regions and those living in treated regions but without minors. Treated regions are: Aragón, Catalunya, Valencia, Balears and País Vasco. All models control for the presence of minors and its interaction with treatment and a post reform dummy and its interaction with treatment. Standard errors in parentheses are clustered at the region level (17 clusters). \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Score bootstrap p-value of main coefficient in brackets. Source: Microdata from the Survey of Violence Against Women, waves 1999, 2002, 2006, 2011 and 2015 (reference years: 1998, 2001, 2005, 2010 and 2014).

**Table 4:** Impact on Non-Extreme Violence by the Level of Education of the Woman and the Partner

	(A) Education of the woman		(A) + the partner has low education (secondary educ. or less)		(A) + the partner has high education (more than secondary)	
	Non-sexual abuse (1)	All types of abuse (2)	Non-sexual abuse (3)	All types of abuse (4)	Non-sexual abuse (5)	All types of abuse (6)
Panel a. Women with <u>low education</u> : with secondary education or less						
<i>Minors * Treat*Post</i>	-0.017** (0.006)	-0.033* (0.012)	-0.014 (0.009)	-0.030 (0.017)	-0.022 (0.001)	-0.036 (0.006)
<i>Score bootstrap p-value</i>	{0.05}	{0.09}	{0.26}	{0.23}	{0.14}	{0.24}
Mean dep. variable	0.036	0.063	0.036	0.066	0.027	0.040
Impact (%)	-47.2%	-52.4%	-38.9%	-45.5%	-81.5%	-90.0%
N	21,289	21,289	19,184	19,184	2,105	2,105
Adj R2	0.035	0.024	0.036	0.024	0.071	0.048
Panel b. Women with <u>high education</u> : with more than secondary education						
<i>Minors * Treat*Post</i>	-0.004 (0.007)	-0.008 (0.010)	-0.008 (0.007)	0.003 (0.019)	0.000 (0.015)	-0.007 (0.015)
<i>Score bootstrap p-value</i>	{0.57}	{0.50}	{0.43}	{0.87}	{0.99}	{0.66}
Mean dep. variable	0.019	0.033	0.024	0.042	0.016	0.027
Impact (%)	-21.0%	-24.2%	-33.3%	-7.14%	0.0%	-3.7%
N	6,455	6,455	2,651	2,651	3,804	3,804
Adj R2	0.063	0.033	0.062	0.031	0.088	0.063
Region and year FE	YES	YES	YES	YES	YES	YES
Age effects	YES	YES	YES	YES	YES	YES
Marital status	YES	YES	YES	YES	YES	YES
Woman controls	YES	YES	YES	YES	YES	YES
Partner controls	YES	YES	YES	YES	YES	YES
Year FE * region	NO	NO	NO	NO	NO	NO

Notes: The table shows the marginal effects of the independent variable of interest in Probit regressions. DiDiD specification, comparing the difference in abuse when minors are and are not present in treated regions versus non-treated regions, and pre versus post reform. The sample includes all women of non-immigrant origin who declare to have the same partner for at least the last five years and who are younger than 50 at the time of the interview. The dependent variable are binary variables indicating whether the woman was subject to abuse, where the variable takes value 1 if the woman answers “sometimes” or “often” to any type of abuse. The treatment group includes women with a partner and living in treated regions and with minors (aged 18 or less) in 2014. The control group includes women with a partner living in non-treated regions and those living in treated regions but without minors. Treated regions are: Aragón, Catalunya, Valencia, Balears and País Vasco. All models control for the presence of minors and its interaction with treatment and a post reform dummy and its interaction with treatment. Standard errors in parentheses are clustered at the region level (17 clusters). \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Score bootstrap p-value of main coefficient in brackets. Source: Microdata from the Survey of Violence Against Women, waves 1999, 2002, 2006, 2011 and 2015 (reference years: 1998, 2001, 2005, 2010 and 2014).

**Table 5:** Impact on Non-Extreme Violence by the Employment Status of the Woman and the Partner

	Non-sexual abuse (1)	All types of abuse (2)
<b>Panel a. <u>Women employed</u></b>		
<i>Minors * Treat*Post</i>	-0.005 (0.009)	-0.009 (0.015)
<i>Score bootstrap p-value</i>	{0.66}	{0.56}
Mean dep. Variable	0.029	0.050
Impact (%)	-17.2%	-18.0%
N	14,422	14,422
Adj R2	0.043	0.033
<b>Panel b. <u>Women non-employed</u></b>		
<i>Minors * Treat*Post</i>	-0.023** (0.005)	-0.043*** (0.007)
<i>Score bootstrap p-value</i>	{0.02}	{0.003}
Mean dep. Variable	0.036	0.062
Impact (%)	-63.9%	-69.3%
N	13,322	13,322
Adj R2	0.038	0.028
<b>Panel c. <u>Women non-employed and men employed</u></b>		
<i>Minors * Treat*Post</i>	-0.025** (0.005)	-0.046*** (0.007)
<i>Score bootstrap p-value</i>	{0.03}	{0.02}
Mean dep. Variable	0.034	0.060
Impact (%)	-73.5%	-76.7%
N	12,174	12,174
Adj R2	0.033	0.026
<b>Panel d. <u>Women non-employed and men non-employed</u></b>		
<i>Minors * Treat*Post</i>	-0.030 (0.010)	-0.042 (0.021)
<i>Score bootstrap p-value</i>	{0.14}	{0.25}
Mean dep. Variable	0.058	0.087
Impact (%)	-51.7%	-48.3%
N	1,080	1,080
Adj R2	0.094	0.070
Region and year FE	YES	YES
Age effects	YES	YES
Marital status	YES	YES
Woman controls	YES	YES
Partner controls	YES	YES
Year FE * region	NO	NO

Notes: The table shows the marginal effects of the independent variable of interest in Probit regressions. DiDiD specification, comparing the difference in abuse when minors are and are not present in treated regions versus non-treated regions, and pre versus post reform. The sample includes all women of non-immigrant origin who declare to have the same partner for at least the last five years and who are younger than 50 at the time of the interview. The dependent variable are binary variables indicating whether the woman was subject to abuse, where the variable takes value 1 if the woman answers “sometimes” or “often” to any type of abuse. The treatment group includes women with a partner and living in treated regions and with minors (aged 18 or less) in 2014. The control group includes women with a partner living in non-treated regions and those living in treated regions but without minors. Treated regions are: Aragón, Catalunya, Valencia, Balears and País Vasco. All models control for the presence of minors and its interaction with treatment and a post reform dummy and its interaction with treatment. Standard errors in parentheses are clustered at the region level (17 clusters). \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Score bootstrap p-value of main coefficient in brackets. Source: Microdata from the Survey of Violence Against Women, waves 1999, 2002, 2006, 2011 and 2015 (reference years: 1998, 2001, 2005, 2010 and 2014).

**Table 6:** Impact on Non-Extreme Violence by Age Group and Type of Province

	By Age Group		By Type of Province	
	<30 (1)	>=30 (2)	Low Take-Up Rate (3)	High Take-Up Rate (4)
<i>Minors * Treat*Post</i>	-0.012 (0.032)	-0.031** (0.009)	-0.037*** (0.007)	-0.018 (0.014)
<i>Score bootstrap p-value</i>	{0.72}	{0.02}	{0.01}	{0.27}
<i>Minors*Treat</i>	-0.019*** (0.005)	0.006 (0.006)	0.005 (0.008)	-0.006 (0.007)
<i>Minors*Post</i>	-0.019** (0.007)	0.009 (0.010)	0.001 (0.019)	0.000 (0.010)
<i>Minors</i>	0.041*** (0.010)	0.005 (0.004)	0.006 (0.003)	0.014*** (0.005)
Mean dep. variable	0.032	0.055	0.049	0.052
Impact (%)	-37.5%	-56.4%	-75.5%	-34.6%
N	4,161	23,583	9,788	17,956
Adj R2	0.067	0.027	0.040	0.027
Region and year FE	YES	YES	YES	YES
Age effects	YES	YES	YES	YES
Marital status	YES	YES	YES	YES
Woman controls	YES	YES	YES	YES
Partner controls	YES	YES	YES	YES
Year FE * region	NO	NO	NO	NO

Notes: The table shows the marginal effects of the independent variable of interest in Probit regressions. DiDiD specification, comparing the difference in abuse when minors are and are not present in treated regions versus non-treated regions, and pre versus post reform. The sample includes all women of non-immigrant origin who declare to have a partner, for at least five years, and who are younger than 50 at the time of the interview. The dependent variable are binary variables indicating whether the woman was subject to abuse, where the variable takes value 1 if the woman answers “sometimes” or “often” to any type of abuse. The treatment group includes women with a partner and living in treated regions and with minors (aged 18 or less) in 2014. The control group includes women with a partner living in non-treated regions and those living in treated regions but without minors. Treated regions are: Aragón, Catalunya, Valencia, Balears and País Vasco. All models control for the presence of minors and its interaction with treatment and a post reform dummy and its interaction with treatment. Standard errors in parentheses are clustered at the region level (17 clusters). \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Score bootstrap p-value of main coefficient in brackets. Source: Microdata from the Survey of Violence Against Women, waves 1999, 2002, 2006, 2011 and 2015 (reference years: 1998, 2001, 2005, 2010 and 2014).

**Table 7: Impact on Non-Extreme Violence: Robustness Tests**

	Preferred specification (col. 4 in table 2) (1)	Weighted (2)	Using 13 strong indicators of abuse (3)	Excluding women With ex-partner (4)	Include relations of less than 5 years (5)	Exclude 2010 (6)	Dynamic Spec (7)	Wom aged 40 or older (8)	Without employ controls (9)
<i>Minors * Treat*Post</i>	-0.026** (0.009)	-0.028** (0.009)	-0.040*** (0.012)	-0.030** (0.008)	-0.018* (0.008)	-0.026** (0.010)	-0.006* (0.003)	-0.038* (0.012)	-0.026** (0.009)
<i>Score bootstrap p-value</i>	{0.06}	--	{0.01}	{0.03}	{0.08}	{0.05}	{0.12}	{0.09}	{0.04}
<i>Minors*Treat</i>	-0.003 (0.006)	-0.003 (0.005)	-0.001 (0.010)	0.004 (0.006)	-0.001 (0.005)	-0.003 (0.006)	-0.003 (0.005)	0.017 (0.012)	-0.003 (0.006)
<i>Minors*Post</i>	-0.003 (0.008)	-0.001 (0.007)	0.003 (0.010)	0.002 (0.008)	-0.007 (0.006)	0.000 (0.008)	.. (0.008)	0.018 (0.017)	-0.001 (0.008)
<i>Minors</i>	0.012*** (0.006)	0.014*** (0.005)	0.022*** (0.004)	0.009** (0.004)	0.012*** (0.004)	0.011*** (0.004)	0.012*** (0.004)	0.002 (0.006)	0.011*** (0.004)
Mean dep. variable	0.060	0.060	0.104	0.055	0.051	0.060	0.060	0.064	0.060
Impact (%)	-43.3%	-46.7%	-38.4%	-54.5%	-35.3%	-43.3%	-10.0%	-59.4%	-43.3%
N	27,744	27,744	27,744	26,639	36,160	25,831	27,744	12,160	27,744
Adj R2	0.015	0.023	0.025	0.028	0.031	0.027	0.028	0.030	0.027
Region and year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Age effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Marital status	YES	YES	YES	YES	YES	YES	YES	YES	YES
Woman controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Partner controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE * region	NO	NO	NO	NO	NO	NO	NO	NO	NO

Notes: The table shows the marginal effects of the independent variable of interest in Probit regressions. DiDiD specification, comparing the difference in abuse when minors are and are not present in treated regions versus non-treated regions, and pre versus post reform. In column (8) *Minors\*Treat\*Post* shows the effect per year and the impact (%) is calculated for four years after the reform. The sample includes all women of non-immigrant origin who declare to have a partner, for at least five years, and who are younger than 50 at the time of the interview. The dependent variable are binary variables indicating whether the woman was subject to abuse, where the variable takes value 1 if the woman answers “sometimes” or “often” to any type of abuse. The treatment group includes women with a partner and living in treated regions and with minors (aged 18 or less) in 2014. The control group includes women with a partner living in non-treated regions and those living in treated regions but without minors. Treated regions are: Aragón, Catalunya, Valencia, Balears and País Vasco. All models control for the presence of minors and its interaction with treatment and a post reform dummy and its interaction with treatment. Standard errors in parentheses are clustered at

the region level (17 clusters). \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Source: Microdata from the Survey of Violence Against Women, waves 1999, 2002, 2006, 2011 and 2015 (reference years: 1998, 2001, 2005, 2010 and 2014).

## Appendix

**Table A1. Measures of Abuse -**

		1999, 2002, 2006, 2011	2015
<b>PHYSICAL</b>	Insults-threatens	"He insults you or threatens you"	"He insulted you and made you feel bad"
			"He has threatened you to do physical harm"
	Frightens	"At times he frightens you"	"Has he scared or intimidated you on purpose (for example shouting and breaking things, looking at you in a certain way)?"
	Pushes-hits	"He pushes or hits you when he's angry"	"Has he slapped you or thrown something that could hurt you?"
			"Has he pushed you, grabbed or pulled your hair?"
<b>SEXUAL</b>		"He insists on having sex even when he knows you don't want to"	"Has he forced you to have sex with him when you did not want to?"
			"Have you had sex without wanting to because you were afraid of what might happen to you?"
			"It has forced you to perform some other sexual practice that you did not want?"
			"Has he tried to force you to have sex against your will?"
<b>PSYCHOLOGICAL-CONTROL</b>		"He prevents you from seeing your family or relating to friends and neighbors"	"Try / tried to prevent you from seeing your friends in the last 12 months"
			"Try / tried to prevent you from seeing your family in the last 12 months"
		"He takes the money you earn or does not give you what you need"	"He refuses / refused to give you enough money for the household expenses"
		"He decides what you can and cannot do"	"Expects / expected for you to ask for permission before going on your own to certain sites such as a hospital or health center, a cultural or sports center, etc."

NOTE.—The measure of technical abuse is based on a series of 7 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.