



FINANCIANDO EL DESARROLLO • AMÉRICA LATINA

CAF
DOCUMENTOS DE TRABAJO

CAF
WORKING PAPERS

THE EFFECT OF PROPERTY DIVISION LAWS ON DIVORCE
AND LABOR SUPPLY: EVIDENCE FROM SPAIN

N° 2013/02

January, 2013

Brassiolo, Pablo

CAF - Ave. Luis Roche, Torre CAF, Altamira. Caracas, Venezuela 01060

© CAF, 2013 por Brassiolo, Pablo. Todos los derechos reservados. Pequeñas secciones del texto, menores a dos párrafos, pueden ser citadas sin autorización explícita siempre que se cite el presente documento.

Los resultados, interpretaciones y conclusiones expresados en esta publicación son de exclusiva responsabilidad de su(s) autor(es), y de ninguna manera pueden ser atribuidos a CAF, a los miembros de su Directorio Ejecutivo o a los países que ellos representan.

CAF no garantiza la exactitud de los datos incluidos en esta publicación y no se hace responsable en ningún aspecto de las consecuencias que resulten de su utilización.

EL EFECTO DE LAS LEYES DE SEPARACIÓN DE BIENES EN EL DIVORCIO Y LA OFERTA DE TRABAJO: EVIDENCIA PARA ESPAÑA

Brassiolo, Pablo

CAF Documento de trabajo N° 2013/02

Enero, 2013

RESUMEN

Este trabajo estudia cómo la posición relativa de los esposos en el hogar afecta la probabilidad de disolución de la pareja y la oferta laboral de parejas que continúan intactas. Se utiliza variación exógena en la posición relativa de los esposos que surge de un experimento natural en España donde las regiones tienen diferentes reglas para la división de la propiedad marital en caso de divorcio. Se aprovechan dos cambios legales en el régimen de separación de bienes de Cataluña, que tienen efectos esperados opuestos sobre la posición relativa de los esposos. Los resultados indican que una reforma que mejoró inesperadamente la posición de la esposa en el hogar incrementó la tasa de divorcio en alrededor de 13 por ciento en el corto plazo, y aunque el efecto se redujo en el tiempo, se mantuvo positivo una década más tarde. En el caso de las parejas que continuaron juntas, la misma reforma causó una reducción en la oferta laboral femenina de entre 0,6 y 2,5 horas por semana y una reducción en la probabilidad de empleo del 2 por ciento. Asimismo, cuando la mejora previa de la posición relativa de la mujer en el hogar se revirtió por una reforma en el alcance de contratos maritales, la oferta laboral femenina reaccionó de manera contraria, con un incremento de las horas trabajadas y en la probabilidad de empleo.

Códigos JEL: J12, J21, K11, K36, D10

THE EFFECT OF PROPERTY DIVISION LAWS ON DIVORCE AND LABOR SUPPLY:
EVIDENCE FROM SPAIN

Brassiolo, Pablo

CAF Working paper N° 2013/02

January, 2013

ABSTRACT

I study how the relative bargaining position of spouses affects the incidence of marital dissolution and the labor supply decision of intact couples. I identify exogenous variation in bargaining position within the household by exploiting a natural experiment in Spain where different regions have different rules to divide marital property in case of divorce. I benefit from two law changes to the separation of property regime in Catalonia, with opposite expected effects on the bargaining position of spouses. I found that a reform that unexpectedly improved the position of the wife within the marriage increased the divorce rate in around 13 percent in the short run, and although this effect seemed to dissipate over time, it remained positive one decade afterwards. For intact couples, I find that the same reform caused a reduction in female labor supply of between 0.6 and 2.5 hours per week, and also a reduction in their probability of employment of 2 percent. Moreover, when the previous improvement in wives' bargaining position was undone by a reform to the scope of marital contracts, female labor supply reacted in the opposite way, with an increase in hours worked and the probability of employment.

JEL Codes: J12, J21, K11, K36, D10

Pablo Brassiolo

CAF

pbrassiolo@caf.com

The Effect of Property Division Laws on Divorce and Labor Supply: Evidence from Spain*

Pablo Brassiolo[†]

CAF - Development Bank of Latin America

January 2013

Abstract

I study how the relative bargaining position of spouses affects the incidence of marital dissolution and the labor supply decision of intact couples. I identify exogenous variation in bargaining position within the household by exploiting a natural experiment in Spain where different regions have different rules to divide marital property in case of divorce. I benefit from two law changes to the separation of property regime in Catalonia, with opposite expected effects on the bargaining position of spouses. I find that a reform that unexpectedly improved the position of the wife within the marriage increased the divorce rate in around 13 percent in the short run, and although this effect seemed to dissipate over time, it remained positive one decade afterwards. For intact couples, I find that the same reform caused a reduction in female labor supply of between 0.6 and 2.5 hours per week, and also a reduction in their probability of employment of 2 percent. Moreover, when the previous improvement in wives' bargaining position was undone by a reform to the scope of marital contracts, female labor supply reacted in the opposite way, with an increase in hours worked and the probability of employment.

JEL Codes: J12, J21, K11, K36, D10

Keywords: Property division laws, divorce, labor supply

*I am grateful to Libertad González for her continuous help and support. I also thank Kurt Schmidheiny, Patricia Funk, José García-Montalvo and Albert Lamarca, as well as the participants of the UPF Labor, Public and Development Lunch Seminar, the ISNE Meeting 2009 in Limerick, the ESPE Meeting 2010 in Essen, and the AEDE Meeting 2010 in Madrid for their helpful comments and suggestions. The remaining errors are mine. Financial support from the Government of Catalonia is gratefully acknowledged.

[†]Contact info: Department of Research and Economic Studies, CAF - Development Bank of Latin America, Luis Roche Ave, Torre CAF, Altamira, 1060, Caracas, Venezuela. Email: pbrassiolo@caf.com

1 Introduction

Does the legal criterion for the division of matrimonial property in case of divorce influence the behavior of spouses within the marriage? And does it have an effect on the incidence of divorce? In this paper I address these questions by exploiting evidence from a natural experiment in Spain, where different regions have different marital property regimes. I argue that rules regulating the division of joint property in case of marital dissolution are relevant to determine household outcomes. Not only the decision about whether to dissolve the marriage can be influenced by the distribution of rights over family assets in the event of a separation, but also the incentives, and then the behavior, of spouses within the marriage may be affected. Specifically, I study how changes to laws governing the division of family assets at divorce affect the probability of divorce, and for those couples that stay together, their incentives to supply labor in the market.

The intuition behind this relation is quite straightforward. The rule for division of joint assets in case of divorce determines the outside option of spouses, which in turn may affect their bargaining position within the marriage. In the traditional model of the household (Becker, 1981), the distribution of property rights over family assets is irrelevant to determine household outcomes, since the family would re-allocate optimally. However, the literature on family economics seems to have arrived to a consensus about the necessity of treating the household as composed by different members with heterogeneous preferences, resulting in the so-called non-unitary models of household behavior.¹ These models include a wide range of theoretical constructions, but the key point in all of them is that the intra-household balance of power matters.

One of the main difficulties of the empirical counterpart of this literature has been to find exogenous sources of variation in bargaining position within the household. I overcome this problem by exploiting a natural experiment given by differences in Family Law across regions in Spain, and two institutional changes that took place during the nineties. The Spanish Civil Code provides a regime of community of property, which is the default regime in all the regions except two (Catalonia and the Balearic Islands). In these two regions, the default regime for all married couples is separation of property. The source of variation in bargaining

¹See Chiappori and Donni (2009) for a recent review of this literature.

power comes from two changes to the law in Catalonia. First, in 1993, an economic compensation for the financially weaker spouse in case of marital dissolution was introduced. I argue that this change exogenously and unexpectedly improved the position of the wife within the household. Second, in 1998, the scope of marital contracts was extended, allowing them to include provisions referring to the dissolution of marriage, which was not possible before. In particular, this legal change opened the possibility that a couple could write a contract limiting or even canceling out the economic compensation introduced five years earlier.

I find that the introduction of the economic compensation for the financially weaker spouse in case of divorce led to a reduction in married women labor supply of between 0.6 and 2.5 hours per week. Part of this effect is explained by changes on the extensive margin. The probability of employment for married women fell by about 2 percent when their were favored by the redistribution of rights over marital assets. These effects were partially reversed when marital contracts were allowed to include provisions referring to divorce, since this implied the possibility of limiting or even eliminating the economic compensation introduced before. Indeed, this latter change led to an increase in married women labor supply of around of 1.2 hours per week, and of 2.6 percent in the probability of employment. I also find an increase in marital dissolution after the introduction of the economic compensation. This positive effect was larger in the first years after the reform and then decreased, but remained still positive one decade later.

This research relates to two strands of literature. On the one hand, there are several papers that show that the distribution of power within the family is relevant to determine the final allocation of resources of the household (McElroy and Horney, 1981; Lundberg and Pollak, 1993; Lundberg, Pollak, and Wales, 1997; Chiappori, 1988, 1992; Chiappori, Fortin, and Lacroix, 2002). According to these papers, the household cannot be considered as a unique decision-making unit subject to a unique budgetary constraint in which only total family income matters.

On the other hand, by exploiting variation in divorce law across regions this paper is close to the vast literature on the impact of divorce legislation on several economic outcomes. This literature has mainly focused on the reforms in divorce laws across U.S. states during the 1970's, when many states removed fault as a ground for divorce and almost all of them allowed one of the spouses to file a

petition for divorce without the consent of the other. One of the outcomes most often considered is the incidence of divorce.² Peters (1986) found that allowing for unilateral divorce does not have any significant impact on divorce rates, a result that was criticized by Allen (1992). Later, Friedberg (1998) found that the divorce rate in states that allowed for unilateral divorce was significantly higher than in other states, and that this legal change could account up to one sixth of the increase in divorce rates in the U.S. during the 1970s and 1980s. However, recently Wolfers (2006) has shown that the increase in divorce rates due to the adoption of unilateral divorce policy was small and faded out within a decade. In an analysis of the impact of different divorce law reforms on the divorce rate in several European countries, González and Viitanen (2009) find that reforms that made divorce easier were followed by significant increases in divorce rates.

Within this literature there are also some papers studying the relation between the rule to divide family assets and labor supply. Gray (1998) evaluates whether the adoption of unilateral divorce law by some states in the U.S. had an impact on married women's labor supply, and finds that this reform had no significant impact unless the underlying marital-property laws in each state are considered. Controlling for these property laws, he finds that the labor supply of wives does appear to respond to their states adopting unilateral divorce statutes and, in particular, that a wife's labor supply is an increasing function of her bargaining position within the marriage. Stevenson (2008) criticizes these results and argues that they are biased due to sample size problems and potentially endogenous controls. Once she accounts for those problems, her results indicate that the incentives provided by unilateral divorce are independent of how matrimonial property is divided. Finally, in a similar setting to the one analyzed here, Kapan (2008) focuses on a House of Lords decision which led to a more equitable distribution of assets between divorcing spouses in England and Wales and finds a negative and significant relationship between married women's bargaining position and female labor supply.

The contribution of this paper is two-fold. First, it contributes to the literature that studies how the spouses' bargaining position within marriage affects their

²Other outcomes are labor supply (Gray, 1998; Stevenson, 2008), fertility (Drewianka, 2008; Alesina and Giuliano, 2006), marriage-specific investments (Stevenson, 2007), implications for children (Gruber, 2004), domestic violence (Stevenson and Wolfers, 2006), and marital formation (Mechoulan, 2006; Rasul, 2006).

labor supply decisions using a natural experiment in Spain. Moreover, the legal change analyzed here unambiguously improves the position of the wife within the marriage, making it easier to interpret the results from a bargaining perspective. This is important since part of the previous literature cannot disentangle the effect of changes in property division laws from that of unilateral divorce reform, and consequently it is unclear which partner's position is improved after the reform (Gray, 1998; Stevenson, 2007, 2008). One paper that does not suffer from this problem is Kapan (2008). One advantage of the setup studied here over the last paper is the use of within country variation in property division laws instead of cross-country variation, plus a richer legal reform given by two legal changes: the introduction of an economic compensation first and the possibility of eliminating it by means of a contract later. Second, this paper brings new evidence to the debate on how divorce legislation affects (if it does) the incidence of divorce. Moreover, the impact on divorce rates of a legal change like the one analyzed here has never been studied before: a change in the rule for the distribution of assets at divorce without any other change in the grounds for divorce.

The rest of the paper is structured as follows. Section 2 presents the institutional background and describes the main reforms to the marital property regime in Catalonia. Section 3 presents the theoretical framework in which this analysis is embedded. The data and methodology are described in Section 4. Section 5 presents and discusses the results and, finally, Section 6 concludes.

2 Institutional Background

2.1 Divorce Law and Marital Property Regime in Spain

In Spain, the general regulation provided in the national Civil Code may coexist with territorial legislation regarding some specific civil law matters. The area of Family Law is an example of this plurality of norms. The general rules regulating the formation and dissolution of marriage are established at the federal level by the Civil Code; however, the Regional States are left with the right to define their own regulations governing some specific family law aspects, as for instance the marital property regime. This particular set-up configures an interesting case to study how different marital property regimes affect several economic outcomes.

The marital property regime is the set of rules governing the ownership of

property during the marriage and the division of it in case the marriage dissolves. In Spain, spouses have the right to choose the property regime by writing a marital contract. If nothing is agreed, the default regime defined in the territorial legislation applies. Two regions have established that, in the absence of marital contracts opting for one particular marital regime, the property of the spouses will be subject to a Separate Property regime (i.e. in case of divorce, property is divided according to who has the legal title). In the rest of regions in Spain, the default rule is the Community Property (i.e. all assets and wealth accumulated since marriage are equally divided between spouses at divorce).

The legal dissolution of a marriage is possible in Spain since 1981, when divorce was reintroduced after four decades of being banned. The divorce law passed in 1981 established a two-step process to deal with marital breakdown. The couple that want to dissolve the marriage should generally resort to a period of separation before being able to file for divorce. Then, the grounds for divorce are closely related to the grounds for legal separation.³ There are two types of separation: by mutual agreement and based on a legal ground. In the first case, either both spouses or one with the consent of the other can file a petition for legal separation. In the second case, adversary separation occurs when one of the spouses files a petition for separation given that the other has incurred in fault.⁴ However, in practice the divorce regime can be considered as close to a no-fault regime, since the Courts have given a loose interpretation of the grounds for separation.⁵

2.2 The reforms to the Regime in Catalonia

Catalonia is the second most populated of the seventeen autonomous communities in Spain, with more than 15 percent of the total Spanish population according

³There is one exception in which is possible to directly file for divorce, that corresponds to the case in which there is risk of violence against the spouse or the children. For a more detailed description of the grounds for divorce in Spain during the years under analysis see Boele-Woelki, Braat, and Sumner (2003)

⁴The legal grounds for separation established in the Spanish Civil Code include situations such as unjustified abandonment of the family home, marital infidelity, and abusive or offensive conduct, among others.

⁵According to Boele-Woelki, Braat, and Sumner (2003), the Courts have referred quite often to the so-called “lack of *affectio maritalis*” as a ground for separation, which can be interpreted as the loss of affection between spouses, continuous arguments and reproaches or the existence of a cold and distant relationship between them.

to the 2001 Census. It is as well one of the richest regions, occupying the fourth position in per capita GDP as of 2009.⁶ During the nineties there were two important modifications to the Catalan marital property regime: the introduction of an economic compensation for the financially weaker spouse and the extension of the scope of marital contracts.

2.2.1 Economic compensation in case of divorce

In 1993, an economic compensation for the financially weaker spouse in case of divorce was introduced in the separation of property regime in Catalonia.⁷ The norm established that if one spouse was working during the marriage either for the house or for the other partner with an insufficient economic remuneration or without it, then he or she has the right to perceive an economic compensation from the other spouse in the event of divorce.⁸

In a separation of property regime, this compensation for the financially weaker spouse can be interpreted as a step towards a more equitable distribution of the family property when the marriage breaks up (Lamarca i Marqués, Farnós Amorós, Azagra Malo, and Artigot i Golobardes, 2003).

The amount of the compensation and whether it should be awarded or not is decided by the judge intervening in the dissolution of the marriage. According to Lamarca i Marqués, Farnós Amorós, Azagra Malo, and Artigot i Golobardes (2003), between 1993 and 1998 many claims for the compensation were either denied or received relatively little amount of money. This institution gained importance in the Catalan marital property regime after some landmark decisions by the Catalan Supreme Court of Justice regarding the criteria to apply the norm, the first in October 1998.⁹ In fact, this strengthening of the economic compensation

⁶Data taken from the National Institute of Statistics, <http://www.ine.es/>.

⁷Art 23 of Act 8/1993. The spouse who has been working for the household or for the other spouse, without compensation or with inadequate remuneration, is entitled to receive, when the marriage ends by legal separation, divorce or annulment, an economic compensation if for that reason a disequilibrium has been generated between his or her assets and those of the other spouse.

⁸It is worth mentioning that this compensation is compatible with any other economic rights to which the favored spouse may be entitled to at divorce, such as alimony payments for instance.

⁹In those interventions the Supreme Court stated clearly that “always when one spouse works for the house or for the other without a retribution, it generates an (unfair) enrichment in favor of the other spouse”, and “to award the economic compensation to one spouse their assets should be compared”, being the difference between them the basis to calculate the amount of compensation (Lamarca i Marqués, 2003).

within the marital property regime in Catalonia is largely related to its introduction into the Family Code of Catalonia in 1998 (Act 9/1998).¹⁰ In Catalonia, the Family Code is a norm of considerable practical relevance to deal with family law matters.

2.2.2 Scope of marital contracts

A second reform to the marital property regime in Catalonia occurred in 1998, when the scope of marital contracts was extended to allow their use, not only to organize the economy of the family, but also to liquidate it.¹¹ That is, since 1998 marital contracts can contemplate the possibility and the consequences of a potential crisis in the marriage.

In general, marital agreements are legal instruments that allow the spouses to make contracts about issues regarding the matrimonial property regime. They are different from the more usual pre-nuptial agreements in the sense that it is possible to write them not only before the marriage but also during it, and even after a possible separation.

Before 1998, marital contracts were a valid contracting instrument for the period during the marriage, but once the marriage was dissolved, this contract lost its legal validity. After 1998, marital contracts can be enforceable even after the couple divorces. This implies that it is now possible for the spouses to contract about economic transfers between them after a potential divorce. Specifically, this opens the possibility that spouses write a marital contract establishing conditions related to the economic compensation for the financially weaker partner (i.e. limiting or even eliminating it).

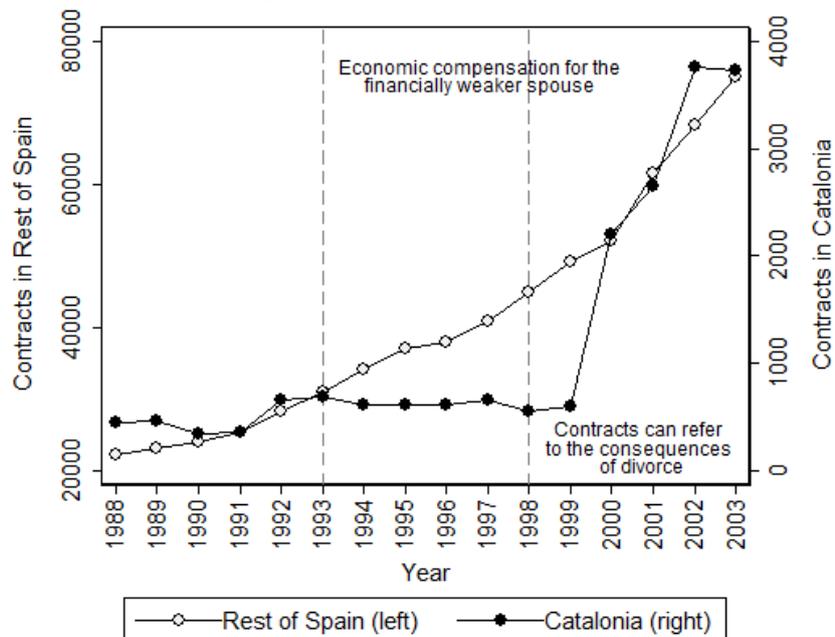
Figure 1 shows the number of marital contracts signed in Catalonia and in the rest of Spain between 1988 and 2002. As can be seen, while in the rest of Spain the annual number of contracts grew steadily during the whole period, in Catalonia there was a huge increase after 1998, when those agreements were

¹⁰Art 41 of Act 9/1998. Economic compensation on the grounds of work: In cases of judicial separation, divorce or marriage annulment, the spouse who has worked for the household or for the other spouse without receiving any payment in exchange or who has received insufficient payment, shall be entitled to receive economic compensation from the other spouse, in the event that this fact has produced a situation of inequality between the two patrimonies, which implies an unfair enrichment.

¹¹Art 15 of Act 9/1998. In marital contracts, it is possible to determine the matrimonial economic system, agreements on inheritances, make donations and establish licit stipulations and pacts that are deemed convenient, even in anticipation of a marriage break-up.

allowed to contemplate the dissolution of the marriage. This seems to support the hypothesis that the new contracting behavior among Catalan couples is directly associated with the two reforms to the marital property regime: the introduction of the economic compensation in 1993 and the possibility to make legal agreements related to it since 1998. That is, although the content of contracts is private and consequently, unobservable, the fact that the only legal change in 1998 is that they can include provisions regarding divorce seems to be an important factor explaining the rise in the number of agreements. For instance, since 1998 a couple can write a contract agreeing that in the case of dissolution of the marriage, none of them has the right to claim the economic compensation established in the marital property regime since 1993, independently of the financial situation of each of them.

Figure 1: Marital Contracts



Source: Administrative data taken from Registries and Notaries Yearbook (*Anuario de la Direccion Nacional de los Registros y del Notariado*).

The number of marital contracts relative to the annual number of marriages can give us an idea of their quantitative importance. In the rest of Spanish regions, the ratio of contracts to hundred marriages goes gradually from 11.8 in 1988 to 39 in 2002. In Catalonia, this ratio remains quite constant around an average of 1.7 annual contracts per hundred marriages until 1998, and increases sharply to reach

the figure of 12.5 in 2002.¹² Thus, although the increase in the number of contracts in Catalonia is important, the fact that they represent a small proportion of new marriages seems to indicate that their impact on the stock of married couples should be observed only gradually.

3 Theoretical Framework and Expected Outcomes

The introduction of an economic compensation in case of divorce redistributes the rights over total marital assets between spouses. Thus, it modifies the nature of the marriage contract by changing the value of the option outside of marriage for both of them. Assuming the wife is the financially weaker spouse, this legal change implies a redistribution of wealth towards her and against the husband. This is a valid assumption insofar as household assets are disproportionately held in the husband's name (Chiappori, Fortin, and Lacroix, 2002; Gray, 1998). Also, it is supported by the evidence provided by court cases regarding the economic compensation, which shows that in almost all cases this compensation is claimed by the wife.¹³

On the other hand, the possibility of writing marital contracts including provisions referring to a potential end of the marriage, makes it possible to use them to restrict or even eliminate the compensation. By the same logic used before, this is expected to have an opposite effect on the relative position of married women within the household. However, we should distinguish between the effect on existing couples at the moment of the reform and the effect on couples formed afterwards. In the case of existing couples, wives whose bargaining position have been enhanced by the compensation would have no incentive to enter into a contract that restricts this benefit. But for new couples, both the compensation and the possibility to modify it by means of a contract are in force at the moment they make their marriage decision. Then, we expect that the effect of the modification of the scope of marital contacts on the intra-household balance of power occurs through changes in the marriage market. Although I will address this issue in the

¹²Ideally, it would be better to calculate the ratio of annual contracts to the number of marriages that involve certain level of wealth (i.e. poorer couples have less incentive to enter into a marital agreement), but this information is not available.

¹³Information available from the legal service *Westlaw* for Spain, which provides case law information about all decisions from the Superior Court of Justice, Provincial and National Hearings and the most interesting decisions from lower courts.

following paragraphs in more detail, the key point here is that a reform that only affects the flow of new couples will have effects on the stock of married people that are noticeable only gradually.

The next two sections benefit from existing theoretical models in the literature of household economics to derive predictions for the effects of the reforms to the marital property regime on the probability of divorce first, and on the labor supply of intact couples, later.

3.1 Marital Dissolution and Formation

The key point is the distinction between the effects of the reforms on the existing stock of married couples (what in the literature is called a “pipeline effect”) and the effects on couples formed under the new regime (a “selection effect”)(Rasul, 2006; Mechoulan, 2006; Matouschek and Rasul, 2008). When the economic compensation was introduced into the Catalan marital property regime in 1993, there was an unexpected redistribution of wealth and assets within the household. For those marriages that are close to the brink of divorce, the favored spouse, whose utility outside the marriage has increased given the higher share of the assets she would be entitled to in case of separation, may want to end the marriage.¹⁴ Then, this incentive effect will affect existing couples by increasing the likelihood of marital dissolution in the population.¹⁵ Moreover, since this is an effect on the stock of existing couples, it could be quantitatively important in the short run.

On the other hand, for those couples that get married under the new regime there is a selection effect, that could affect the composition and the quality of new matches. With regard to the composition, under the new regime we expect fewer matches between heterogeneous partners in terms of wealth, in particular between 1993 and 1998, when the economic compensation was in force and contracts could not contain provisions regarding divorce. With regard to the quality of new

¹⁴An implicit assumption here is that there is not perfect Coasian bargaining. The strict application of the Coase theorem would lead to the prediction of no changes in the incidence of divorce, since spouses would bargain to reach the efficient outcome. There is, however, enough empirical evidence suggesting that the assumptions in which this theorem is based are not realistic (Peters, 1986; Stevenson and Wolfers, 2006).

¹⁵This reasoning is based on the assumption that the divorce regime in Spain during the period of analysis can be considered in practice as a no-fault regime. The lack of “*affectio maritalis*” as an accepted and widely used ground for separation makes this a reasonable assumption. See for instance Boele-Woelki, Braat, and Sumner (2003) and the legal literature cited there.

matches, the economic compensation is expected to foster cooperation between spouses and investments in marriage-specific capital, leading to a reduction in the probability of marital breakdown (Stevenson, 2008).

The second reform, the extension of the scope of marital contracts, should not have, in principle, an effect on the probability of divorce. Since I argued before that this reform is less relevant for existing couples, the main effect should come through impacts on the marriage market. To think of the potential effect of this reform on divorce intensity through changes in the marriage market, we need to ask how the selection into marriage would change as a consequence of the reform. In other words, which couples that would not have married under the contracting rules before 1998, are willing to do it after the legal change? These could be couples characterized by more wealth heterogeneity, that is, couples in which the richer partner would not want to risk his or her assets in the case of separation after marriage. These couples can now marry and write a contract agreeing upon the distribution of assets in case of separation. However, there is no reason to expect a different probability of divorce for those couples. Therefore, we expect no effect of the extension of marital contracts on the probability of divorce.

To sum up, the introduction of the economic compensation into the marital property regime in Catalonia 1993 is expected to have a positive impact on the probability of marital dissolution, as a consequence of the change in incentives for existing couples. This effect would tend to fade out as the composition of new matches changes due to a selection effect through the marriage market. Also, the modification of the scope of the contracts in 1998 is expected not to have an (independent) effect on divorce rates.

3.2 Intra-household Allocation and Labor Supply

We should distinguish again between the effects on existing couples from the effects on individuals not yet married. As mentioned, the introduction of the economic compensation into the Catalan marital regime redistributed family wealth in favor of the wife. While this could have led to more divorces, it could have affected intact marriages as well. According to the collective model of the household (Chiappori, 1988, 1992), a reform like this improves the bargaining position of the wife, and then shifts each spouse's commodity and time use to more strongly reflect her

preferences.¹⁶

The theoretical link between the intra-household bargaining position and labor supply is provided by Chiappori, Fortin, and Lacroix (2002). They show that a redistribution of family wealth in favor of the wife would be equivalent to a higher share of non-labor income allocated to her. Then, to the extent that spousal labor supply is responsive to income, standard income effects should, all else equal, lead to a reduction in female labor supply and an increase in male labor supply. The total effect on husband's labor supply is less clear, since a substitution effect operates in the opposite direction.

The modification of the scope of the contracts in 1998 could have affected married people labor supply mainly through changes in the marriage market.¹⁷ We expect that this new reform deteriorated the position of wives in those marriages formed after 1998, which according to the collective model of the household would lead to an increase in their labor supply.

4 Data and Identification Strategy

4.1 Data

The data for the estimation of the impact on marriage dissolution rates come from the administrative registries of judicial statistics. These data are comprised of the total number of marital dissolutions (divorces, separations, and marital annulments) at the region level, from 1990 to 2004.

In the estimation of the impact on labor supply I will use data coming from the Spanish Labor Force Survey (*Encuesta de Población Activa*), covering all quarters since 1990 and until 2002. This survey is carried out every quarter by the Spanish National Institute of Statistics on a sample of some 60,000 households,

¹⁶It should be noticed that the prediction would be entirely different under the so-called unitary model to household modeling Becker (1981). That model is based on the assumption that household members act as if they maximize a unique utility function under a common budget constraint, which implies that the distribution of property rights within household is irrelevant to determine household outcomes.

¹⁷As mentioned before, although contracts can be written at any moment, wives whose balance of power within the household has been improved due to the economic compensation would not have incentive to restrict that benefit by means of a contract. And since the two spouses have to agree to write a contract, we reasonably can expect that this reform did not affect existing couples in an important way.

and it is designed to be representative of the Spanish population. The survey has a rotating scheme by which in each quarter one sixth of the sample is renewed, so households are expected to be in the survey for six quarters.¹⁸

4.2 Econometric Specification

To study how the rules governing the division of property at divorce influence household outcomes this paper benefits from a natural experiment in Spain, given by the regional variation in marital property regime across Spanish regions. Unexpected and exogenous law changes in some regions but not in others are an ideal source of variation for the estimation of causal effects. In this paper, I take advantage of the main modifications to the Catalan Family Law during the nineties to identify variation in the bargaining position of spouses within the household.

As noted earlier, the economic compensation for the financially weaker spouse in case of divorce was introduced in the marital property regime of Catalonia in 1993. Later, in 1998, a new law change extended the scope of marital contracts, allowing them to refer to the consequences of marital dissolution, which I argued made it possible to use these legal instruments to limit or even eliminate the economic compensation for the financially weaker spouse.¹⁹

Then, the natural experiment to exploit here is to analyze whether the introduction of the economic compensation first, and the modification of the contents of marital agreements later, had any impact on household outcomes in Catalonia, using as a control group individuals from the rest of Spanish regions where the community of property regime is the norm and where there were no relevant

¹⁸The data are available in two formats: (i) the cross-sectional dataset, and (ii) the longitudinal dataset. The latter has the advantage of including a unique identification code for each individual that allows to match observations from quarter to quarter. However, the former dataset is richer in information since some key variables are dropped from the panel dataset (e.g. the household identifier and the region of residence, two key variables for this study, are some of the variables missing). To overcome these difficulties, I match both datasets in a way that allows me to have all the information included in the cross-sectional dataset plus the individual code to identify individuals over time. This is done using only information contained in both datasets, and as a result of the procedure employed to perform the matching 100 percent of the observations are matched correctly.

¹⁹It should be remembered that the legal modification to the Catalan Family Code in 1998 encompassed also the introduction of the economic compensation into this legal norm. Given the importance of the Family Code in Catalonia as a systematization in one legal body of all norms regarding family law, this introduction could have had an additional effect on household outcomes of an opposed sign to the one predicted for the extension of the scope of marital contracts.

legislative changes during the period.²⁰

In cases like this in which there is only one region treated and several untreated regions that potentially could be part of the control group, there is always the question of which regions conform an adequate control group. I will follow the criterion of including in the control group only those regions with similar trends in the outcome to Catalonia during the pre-treatment period. This is because difference in differences is a valid identification strategy only if the treatment and control groups have similar trend in the outcome of interest in the pre-treatment period (Galiani, Gertler, and Schargrotsky, 2005; Heckman and Hotz, 1988).²¹

Therefore, in the regression results below the control group is selected according to the following criterion. The outcome of interest, y_{rt} , is regressed during the pre-treatment period ($t < 1993$), on a linear time trend, a full set of dummies for all seventeen Spanish regions (μ_r), and the interactions of those dichotomic variables with the linear trend. That is:

$$y_{rt} = t + \sum_r \mu_r + \sum_r \mu_r * t + u_{rt} \quad (1)$$

Setting Catalonia as the omitted category, only regions with coefficients in the interaction term not significantly different from zero are selected and included in the control group.

4.2.1 Divorce Probabilities

The data to estimate how changes to the marital property regime affect the incidence of divorce come from judicial statistics. I use administrative information on the number of marital dissolutions aggregated at the region level for the period since 1990 to 2004. The sample period starts in 1990 to have four years of data before the treatment (the first law modifying the property division regime was applicable since the end of 1993, so the treatment indicator equals 1 since 1994 onwards) and it is truncated in 2004 to avoid obtaining results that may be confounded with the effects of another important law passed in 2005, which modified

²⁰There is one exception to this given by the fact that in Balearic Islands the default system is the separate property regime. However, since there was not any relevant change in this regime during the period of analysis, it will form part of the control group.

²¹Alternatively, I run all the regressions including all the remaining regions as the control group, and the main results are mostly the same.

the grounds for divorce.

The dependent variables in the analysis are the divorce rate and the separation rate, defined as annual divorces or separations per thousand people, respectively. To account for pre-existing differences across regions in the level of marital dissolution I include region fixed effects in the regressions. Also, given that the control group is conformed by regions with the same linear trend in the rate of dissolution, it is not necessary to control for unobservable factors that may induce region-specific linear trends. Then, the two equations to estimate are the following:

$$d_{rt} = \beta_1 cat * post93 + \beta_2 cat * post98 + \sum_r \mu_r + \sum_t \lambda_t + u_{rt} \quad (2)$$

$$d_{rt} = \sum_d \beta_d cat * year_{td} + \sum_r \mu_r + \sum_t \lambda_t + u_{rt} \quad (3)$$

where d_{rt} refers to either the divorce rate or the separation rate, μ_r and λ_t represents region and year fixed effects, respectively. Variables *post93* and *post98* are binary variables set equal to one for the period after the property division regime was modified in Catalonia, while *cat* is another dummy variable set equal to one for Catalonia. Hence, the coefficients of the interaction terms of those variables measure the impact of the reforms on marital dissolution rates. That is, β_1 should be interpreted as the average change in the dependent variable due to the legal change in 1993, while β_2 is the average change in the dependent variable attributable to the legal change in 1998. Notice that, given the definition of the variables *post93* and *post98*, the net impact of the reforms after 1998 is given by the summation of the two coefficients β_1 and β_2 .

Equation 3 differs from equation 2 in that it allows for dynamic effects of the reforms. Wolfers (2006) states that this type of specification is preferable when the reform is expected to have initially a large effect (i.e. due to a “pent-up” demand for divorce in this case), but the long run effect may be negligible. So *year_{td}* is a vector of dummy variables that equal 1 if the (first) reform has been effective for d years at time t .²²

²²Same as in Wolfers (2006), I combine years into two-year groups: one dummy for the first two years after the reform, another for the next two years, and so on.

4.2.2 Labor Supply

The main empirical strategy is again to compare changes between Catalonia and the regions included in the control group in the labor supply of wives and husbands before and after the reforms.

The main dependent variable is the number of usual hours worked per week reported by married individuals, including the zeros. The data for the estimation of the impact of the reforms on labor supply come from the Spanish Labor Force Survey. First I use the pooled cross sections of all quarters from 1990 to 2002 to estimate both an OLS regression and a Tobit specification. The reason why we need a tobit specification is the inclusion of the zeros in the hours regression. Therefore, the main specification for the pooled cross-sections is the following:

$$h_{irt} = \beta_1 cat * post93 + \beta_2 cat * post98 + x_{it}\delta + \sum_r \mu_r + \sum_t \lambda_t + u_{it} \quad (4)$$

where *post93* and *post98* are two binary variables defined the same as before, *cat* is a dummy variable for Catalonia, and *x* is a set of control variables.

Since hours of work is a non-negative random variable that equals zero for some fraction of the sample, the difference in hours across treatment groups can be decomposed in two parts: the difference in the probability of being employed (participation effect), and the difference in hours conditional on employment.²³ We may be interested in analyzing how these reforms change the probability of employment.²⁴ Then, I use the linear probability model to estimate the same equation but with a binary indicator for employment status in the left-hand side:

$$e_{irt} = \beta_1 cat * post93 + \beta_2 cat * post98 + x_{it}\delta + \sum_r \mu_r + \sum_t \lambda_t + u_{it} \quad (5)$$

The coefficient of interest are the interaction terms β_1 and β_2 , which are interpreted as the average change in the usual number of hours worked per week

²³See Angrist and Pischke (2008) for the details.

²⁴The second part, the difference in hours conditional on participation, has no special interest, since it does not have a causal interpretation. Angrist and Pischke (2008) show that the treatment changes the composition of the group with positive working hours resulting in a kind of selection bias.

attributable to the reforms in 1993 and 1998, respectively. Again, the variable *post93* is set equal to 1 over the whole period after 1993. This means that β_1 should be interpreted as the average impact of the reform in 1993 for the rest of the estimation period, while β_2 should be interpreted as the additional impact of the law change in 1998. Then, adding these two coefficients we would obtain the net impact after 1998. The coefficient β_1 is expected to be negative for married women (both the income and the substitution effects go in the same direction) and could be either positive or negative for married man (income and substitution effects have opposite signs). For the same reasons, the coefficient β_2 is expected to be positive for married women and negative for married men.

The control variables included in the regressions are a second order polynomial in age, a set of educational attainment dummies, a dummy for being in school, the regional unemployment rate and per capita GDP to control for business cycles, age and education of the spouse, and dummies for different quarters to control for seasonality. In addition, in all specifications region and time fixed effects and included.

I select a sample of married individuals aged between 30 and 50 years old in order to better capture labor supply decisions as a consequences of intra-household bargaining and avoid the confounding effects of both education related decisions of younger individuals and also earlier retirement decisions of older people. I also restrict the sample to those individuals that are observed along the six interviews and whose marital status is unchanged over that period. This allows me to focus the attention on the impact of the reform on the spouses labor supply as a consequence only of changes in their bargaining position within the household (i.e. all individuals whose marriages break down within the six quarters span are dropped from the sample).

To fully take advantage of the available data, I also run the same equations including fixed effects at the individual level. The gain of including individual fixed effects is to control for differences in unobservable characteristics between individuals in the treatment and in the control group. Then, the equations to be estimated are similar to equations 4 and 5 but including individual fixed effects(δ_i):

$$h_{irt} = \beta_1 cat * post93 + \beta_2 cat * post98 + x_{it}\gamma + \sum_r \mu_r + \sum_t \lambda_t + \delta_i + u_{it} \quad (6)$$

$$e_{irt} = \beta_1 cat * post93 + \beta_2 cat * post98 + x_{it}\gamma + \sum_r \mu_r + \sum_t \lambda_t + \delta_i + u_{it} \quad (7)$$

Finally, an important concern regarding the correlation between the reforms and spousal labor supply is that it could be driven by some other (unobserved) socioeconomic factors, different from changes in the bargaining position of the spouses. Then, as a robustness check, I perform a Difference-in-Difference-in-Differences analysis, using single individuals as an additional control group. That is, controlling not only for changes in labor supply in the rest of Spanish regions, but also for changes in the labor supply of unmarried individuals (i.e. people similar to the treatment group who should not be affected by the policy), it is possible to rule out the effect of factors that could be potentially correlated with the two variables of interest.²⁵

5 Empirical Results

5.1 Impact on the Divorce Rate

The potential impact of rules governing the division of joint property upon divorce on marital dissolution has special interest for two reasons. First, if the modification of the rules affecting the division of matrimonial property has an impact on aggregate dissolution rates, it could also have an impact on the labor supply of married individuals, to the extent that labor supply decisions of married people are sensitive to the probability of divorce. Moreover, insofar as marriages that break down because of the law change are not randomly selected from the pool of marriages, there could be a compositional effect that will alter married individuals' labor supply as well. Second, whether a change in divorce legislation has a causal effect on divorce rates is an interesting question in itself that has generated

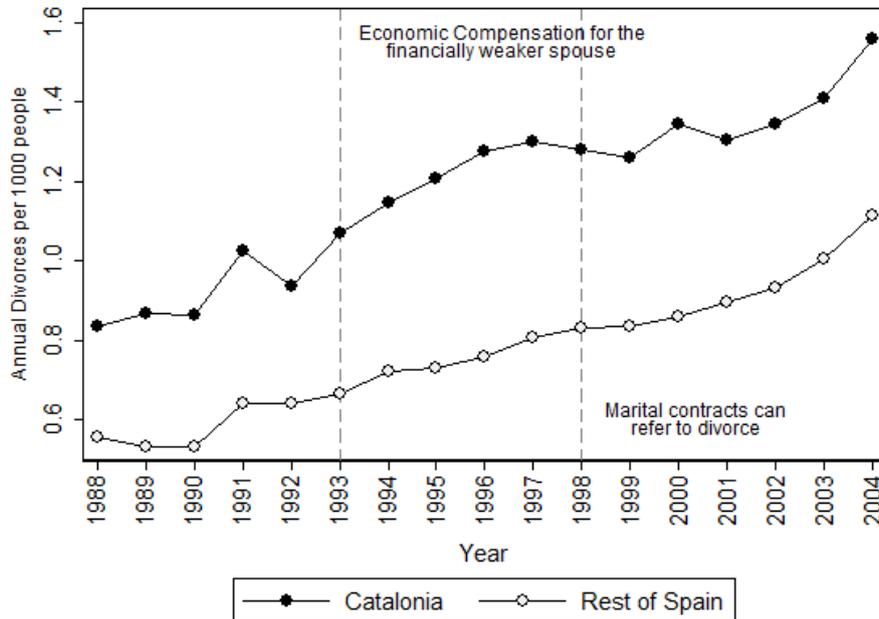
²⁵Some papers in the literature try to solve this by doing placebo tests. That is, they look at the effects of the reform on groups that should not be affected. For instance, Chiappori, Fortin, and Lacroix (2002) propose to test whether the change in the divorce rule had an impact on the labor supply of single individuals, who are not supposed to be affected if the collective model is the true explanation. Stevenson (2008) performs a similar placebo test and finds a significant impact of the changes to unilateral divorce on the labor supply of single women, which she attributes to some anticipation effect.

a long and still open debate. Thus, bringing new evidence to this literature is an important contribution, particularly since the impact of a change only in the rule governing the division of joint assets without any other modification in the grounds for divorce has never been studied before. This literature has focussed on the effects of unilateral revolution in the U.S. (Peters, 1986; Allen, 1992; Friedberg, 1998; Wolfers, 2006) and of norms that made divorce easier in Europe (González and Viitanen, 2009). To the best of my knowledge, this is the first paper asking whether a change in property division laws at divorce can have an impact on the probability of marital dissolution.

Figure 2 shows the evolution of the divorce rate by region, measured as annual divorces per thousand people. We can notice an increase (both over the trend and in comparison to the rest of Spanish regions) in the annual number of divorces per 1000 people between 1993 and 1998 in Catalonia, when the financially weaker spouse can claim an economic compensation which can not be restricted or eliminated by a marital contract. After 1998 the evolution of the annual number of divorces in Catalonia seems to be similar to that of the rest of Spain, although there seems to be a broader gap in levels between the two groups. Although this graphical evidence seems to point to an increase in the number of marriages that break up between 1993 and 1998 in Catalonia, there is still room for an explanation related to the two-step process that the dissolution of a marriage requires in Spain. That is, given that when the economic compensation was introduced in 1993 there was a stock of separated but not divorced people, the apparent increase in the number of divorces in Catalonia could be just an advance of divorce proceedings of couples already separated, without any change in the number of marriages breaking up. To test this hypothesis, Figure 4 in the appendix shows the evolution of the annual number of legal separations in the same two groups and during the same period of time. We can observe an increase in the separation rate in Catalonia with respect to the rest of Spain between 1993 and 1998, a behavior compatible with the hypothesis that changes in marital property regime have an effect on the incidence of marital dissolution. I explore more formally this conjecture with the regression analysis that follows.

Table 1 reports the estimates for equations 2 and 3, and for the two dependent variables under analysis, divorce and separation rates. The specification in column 1 shows the average impact of the two reforms to the marital property regime in

Figure 2: Divorce Rate



Source: Administrative data taken Judicial Statistics (*Consejo General del Poder Judicial*).

Catalonia during the period under analysis. We can see that the coefficient of the interaction term $cat * post93$ is positive and statistically significant, while the coefficient of the interaction term $cat * post98$ is also statistically significant but negative and lower in magnitude. This suggests that the introduction of the economic compensation had a positive impact on the divorce rate in Catalonia, an effect that is only partially reversed after 1998, when marital contracts can refer to the consequences of a crisis in the marriage. It should be noticed that the net effect of the two reforms on the number of divorces is still positive after 1998. This implies that the possibility of imposing limits to the economic compensation by means of a contract have mitigated, but not eliminated, the positive impact of that institution on the incidence of divorce. Regarding the magnitudes of the estimates, given an average of .933 divorces per thousand people in Catalonia, the increase in divorce rates by about .123 between 1993 and 1998 translates to a increase of about 13 percent in annual divorces than can be explained by the economic compensation. The effect after 1998 is still positive and equal to $.123 - .05 = .073$, and it implies that the average divorce rate in Catalonia remains about 8 percent higher due to the combined effect of the two reforms.

Table 1: Impact on Marital Dissolution

Dependent variable	Divorce rate		Separation rate	
	(1)	(2)	(3)	(4)
cat*post93	0.123*** (0.018)		0.168*** (0.030)	
cat*post98	-0.050*** (0.017)		-0.043 (0.030)	
Years 1-2		0.099*** (0.023)		0.120*** (0.040)
Years 3-4		0.155*** (0.023)		0.209*** (0.041)
Years 5-6		0.093*** (0.023)		0.171*** (0.040)
Years 7-8		0.095*** (0.023)		0.139*** (0.040)
Years 9-11		0.056*** (0.020)		0.106*** (0.034)
Year effects	$F = 125.3$	$F = 123.1$	$F = 220.1$	$F = 215.4$
Region effects	$F = 293.4$	$F = 293.3$	$F = 147.8$	$F = 148.9$
Adj. R^2	0.969	0.969	0.960	0.959
N° of obs	286	286	286	286

Notes: Divorce (Separation) rate is the annual number of divorces (separations) per 1000 people. Estimated using region's population weights. Sample period 1990-2004. The control group includes regions 1-4, 6, 10-12, 14, 16-17. Robust standard errors are reported in parentheses. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Column 2 shows the results obtained with the more flexible specification given in equation 3. We can see that all the coefficients for the two-year periods after 1993 are positive and statistically significant. They show, however, an interesting dynamic pattern for the divorce rate in Catalonia as a consequence of the reforms. The impact of the economic compensation reached its maximum three or four years after its introduction into the Catalan marital property regime, and then started to decrease. It remained positive, however, during the whole period of analysis.

There are at least two possible explanations for this behavior. One is the existence of a “repressed” demand for divorce. When the compensation improved the outside option for some spouses whose marriages were on the brink of divorce, they decided to dissolve their relationships. The maximum effect is obtained three to four years after the legal change, somehow expected given the normal delay of divorce proceedings (in particular given the two-step process required). A second explanation is that the selection into marriages is playing a role. The law change may have induced more homogeneous marriages in Catalonia, reducing the incidence of divorce some years later. Given the short period of time we are referring to, I do believe that the first explanation is more likely to be driving this behavior in the divorce rate.

Columns 3 and 4 present the same two specifications but using annual number of separations per thousand people as the dependent variable. The results somehow confirm the conclusions obtained by analyzing the response of number of divorces. There is an increase in the number of separations in Catalonia after 1993, which can be attributable to the inclusion of the economic compensation into the Catalan marital property regime. A subtle difference when looking at separations instead of divorces, is that the partial reversion after 1998 of the initial jump in 1993 in the number of couples filing for separation is not statistically significant. The coefficient of the interaction term $cat * post98$ is negative but insignificant. The magnitude of the effect is similar to the one obtained when using divorce rate as the dependent variable. An increase of .168 in the average annual number of separations after 1993, in terms of an average of 1.2 separations per thousand people in Catalonia before the law change, is equivalent to a 14 percent increase. Finally, the last column presents the result when the dynamic response of the separation rate is explicitly taken into account. We can derive the same conclusions than in the case of the divorce rate. There is an increase in the number of annual separations in Catalonia after the introduction of the economic compensation that reaches its maximum about three or four years after the reform. After that, this impact seems to fade out but remains positive during the whole period under analysis.

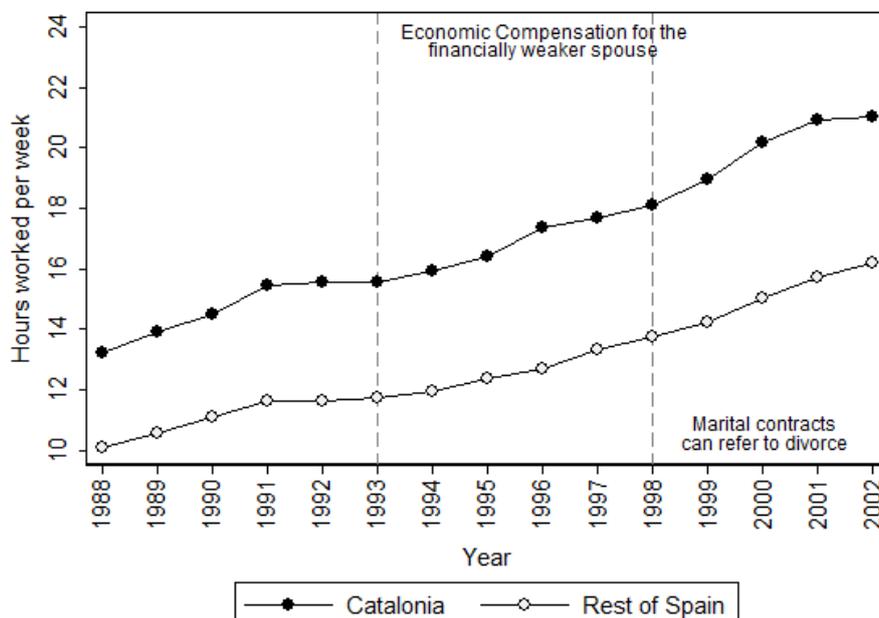
Overall, the main conclusion seems to be that the introduction of the economic compensation generated a significant (both statistically and economically) increase in marital dissolution rates, that can be partially explained by couples already separated advancing their divorce proceedings, but also by some new marital breakdowns as a consequence of the new rules of the game.

5.2 Impact on Labor Supply

Figure 3 shows the evolution of weekly hours worked by married women in Catalonia and the rest of Spanish regions.²⁶ We can notice an increasing trend in working hours for both groups during the whole period, with a more or less constant difference in levels of about two hours in favor of Catalonia.

²⁶Non-employed married women are included with number of working hours set to zero, in order to capture adjustments in both the extensive and the intensive margins.

Figure 3: Usual weekly hours. Married Women 30-50 years old



Source: Microdata from the Spanish Labor Force Survey, National Institute of Statistics, Spain.

5.2.1 Main Results

The main results of the labor supply reduced-form regressions for married women are summarized in Table 2.²⁷ The period of analysis goes from 1990 to 2002, including data from all quarters. I choose this period of time in order to include four years before the first reform and four after the second reform. The estimation sample is restricted to married women between 30 and 50 years of age who have been interviewed during six consecutive quarters.

Columns 1, 3, and 4 report the results when the dependent variable is the number of hours per week a married woman works in the market, while columns 2 and 5 report the results when the binary variable for employment status is on the left-hand side. The two coefficients of interest are those of the interaction terms $post93 * cat$ and $post98 * cat$, which give the average change in female hours of market work attributable to the reforms to the marital property regime in Catalonia. All the specifications shown in the table control for differences in levels of the dependent variable that are constant across regions during the sample period by including region fixed effects, and also for differences across time that are com-

²⁷Full regression results are available from the author upon request.

mon for all regions, by including year fixed effects. Also, reported standard errors are clustered at individual level to account for the presence of correlation within individuals over time (Bertrand, Duflo, and Mullainathan, 2004).

In all specifications the coefficients have the expected sign. The introduction of the economic compensation for the financially weaker spouse, usually the wife, is expected to cause a reduction in married women's labor supply, while the possibility of diminishing or eliminating this compensation by mean of a contract is expected to have the opposite effect. The first column shows the results when the labor supply equation is fitted with an OLS criterion. The coefficient of $post93*cat$ is negative and statistically significant (at 10 percent level), and equal to $-.688$, while the variable $post98 * cat$ has a positive and significant coefficient of 1.288 . This means that (married) women reduced their labor supply when they were entitled to a higher share of marital assets in case of divorce by less than one hour per week, but this effect reversed when contracts were allowed to have provisions about the situation after divorce. The net effect after the two reforms according to the OLS specification is an increase in female labor supply by less than one hour ($-.688+1.288=.6$) per week. Column 3 reports the coefficients when the equation is fitted with a Tobit model. This model is preferred over OLS given the large numbers of zeros in hours worked. In this case, the introduction of an economic compensation reduced married women labor supply by about 2.5 hours per week, and this effect was not reverted by the reform to the scope of the contracts (the coefficient is plus 1.127 but insignificant).

We want to know as well to what extent the average change in hours worked comes from changes in the extensive margin (i.e. changes in participation into employment). The estimates in column 2 indicate that indeed part of the response comes through changes in the extensive margin. The probability of being employed for married women fell by 1.8 percent as a consequence of the economic compensation, but increased by 2.6 percent following the modification of the scope of marital contracts.

So far, the benefit of having more than one observation per individual over time is that we can focus on married people who continue married during the six-quarter windows of the survey. In this manner, we can concentrate our attention on the relationship between rules for division of marital property and the labor supply decision of intact marriages, interpreting the results as arising from changes

in the intra-household balance of power.

Nevertheless, the main advantage of having more than one observation per individual is that it allows us to control for unobserved (fixed) effects. Even though, it should be kept in mind that this is a short panel (only six observations per individual covering a period of one year and a half), and the result would refer to the very short term impact of the reform. That is, given that the identifying variation for each coefficient comes from a discrete policy shock, results are determined by the variation in the dependent variable around the policy change (to be more precise, from changes in the number of hours that are not further away from each reform than 5 quarters). Then, columns 4 and 5 report the results of the panel estimation with individual fixed effects for working hours and employment status, respectively. Looking at hours, we can see again a negative and statistically significant impact of the economic compensation on married women's labor supply of about half an hour per week, and no impact of the extension of the scope of the contracts. And similar results can be derived from changes in probability of employment: the economic compensation had a significant negative impact in female employment, while the extension of the scope of marital contracts in 1998 had no significant effect.

Finally, there is one additional result that is worth mentioning. According to the theoretical framework, the introduction of the economic compensation should affect the stock of existing couples at the moment of the reform, while the change in the scope of the contracts is expected to have an impact more on the flows than on the stock, through changes in the marriage market. That is, while for the first reform we expect to find an almost immediate effect, for the latter, if there is any effect, it should appear more gradually. The estimation that exploits the longitudinal aspect of the data is an interesting manner of testing this hypothesis, given the short time dimension of the panel. In fact, the results reported in the last two columns are compatible with the expected timing of the reforms: the reform that theoretically should have affected the stock of married women (economic compensation) had a statistically significant impact on labor supply in the very short run, while the change whose effects are expected to be noticeable only gradually (scope of marital contracts) had no significant effect within the first six quarters after the reform.

The results of the regressions for married men are reported in the Appendix

Table 2: Impacts on Married Women Labor Supply

Dependent variable	Ordinary Least Squares		Tobit	Panel-FE	
	Hours (1)	Employment (2)	Hours (3)	Hours (4)	Employment (5)
post93*cat	-0.688* (0.402)	-0.018* (0.010)	-2.508*** (0.971)	-0.463** (0.210)	-0.011** (0.005)
post98*cat	1.288*** (0.374)	0.026*** (0.009)	1.127 (0.812)	0.237 (0.242)	0.004 (0.006)
Region FE	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes
Individual FE	no	no	no	yes	yes
Adj. R^2	0.108	0.124		0.001	0.002
N° of Obs.	493277	493277	493277	493277	493277

Notes: The sample includes women aged 30-50 years, who appear in 6 interviews with the same marital status. Sample period 1990-2002. The control group includes regions 1-4, 7-8, 11, 13, 16-18. The vector of control variables contains age, age squared, educational dummies, regional employment rate, per capita GDP at the regional level, and spouse-level controls such as age and education. Cluster-robust (at individual level) standard errors are reported in parentheses. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

(Table 7). The specifications that exploit the repeated cross-section version of the sample yield coefficients for the variables of interest that are of small magnitude and not statistically different from zero. These results are consistent with the abundant empirical and theoretical evidence that shows a low labor supply elasticity for males of prime age. The panel estimation shows a negative and significant coefficient for married men after the introduction of the economic compensation in 1993, and again a negative and significant coefficient after the reform to the scope of the contracts in 1998.

5.2.2 Groups more affected by the reform

The main results showed above support the main prediction regarding the relationship between rules for division of property at divorce and female labor supply: the higher the share of marital property that goes to the wife, the lower her labor supply. This relationship is expected to be stronger for couples with higher level of assets and wealth, although unfortunately, there is no direct information in the data about how wealthy a family is that can be used to test this hypothesis. The data contain, however, information on variables that could help identifying those couples with higher levels of assets. One of these variables is the type of job the husband is performing. If we assume that there is a correlation between being the owner or manager of a firm and the level of marital assets, we can use this information to proxy the level of wealth of the family. Table 3 show the results of labor supply regressions for wives whose husbands declare in the survey to be the

owner or manager of a firm. As expected, we can see larger impacts of the reforms to the Catalan marital property regime on married women in wealthier couples.

Table 3: Impact on particular subgroups: Wives of firm's owners

Dependent variable	Ordinary Least Squares		Tobit	Panel-FE	
	Hours (1)	Employment (2)	Hours (3)	Hours (4)	Employment (5)
post93*cat	-1.477*** (0.423)	-0.034*** (0.010)	-3.612*** (0.918)	-0.748* (0.438)	-0.010 (0.011)
post98*cat	1.586*** (0.377)	0.031*** (0.009)	2.416*** (0.777)	-0.170 (0.477)	-0.004 (0.014)
Region FE	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes
Individual FE	no	no	no	yes	yes
Adj. R^2	0.068	0.075		0.001	0.002
N° of Obs.	117036	117036	117036	117036	117036

Notes: The sample includes wives aged 30-55 years whose husband declares to be the owner/maganer of a firm with or without employees, who appear appear in 6 interviews with the same marital status. Sample period 1990-2002. The control group includes regions 1-5, 7-8, 11, 13, 16-18. The vector of control variables contains age, age squared, educational dummies, regional employment rate, and spouse-level controls such us age and education. Cluster-robust (at individual level) standard errors are reported in parentheses. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

5.3 Robustness Checks

Table 4 reports the results of the triple difference estimation for married women, where the impacts of the reforms to the marital property regime on labor supply are estimated controlling not only for changes in the labor supply of married women in the rest of Spain, but also for changes in the labor supply of unmarried women in all regions. Then, the coefficients of interest are those of the interaction terms between the dummies for the periods after each reform and being a married women residing in Catalonia. As we can see, the sign for the coefficient of $post93 * cat * marriedw$ remains negative for the introduction of the economic compensation in all specifications, but it is only statistically different from zero (at 10 percent level) in the regression for hours worked when individual fixed effects are controlled for (column 4). The coefficient of $post98 * cat * marriedw$, on the other hand, has no stable sign and is always insignificant. (Should we expect the same sign here as in the DD estimation, given that we postulate that the reform of the scope of contracts should have an impact through changes in the marriage market? This could imply an effect on the behavior of single individuals who want to get married...)

Table 4: Impacts on Married Women Labor Supply. Triple Difference

Dependent variable	Ordinary Least Squares		Tobit	Panel-FE	
	Hours (1)	Employment (2)	Hours (3)	Hours (4)	Employment (5)
post93*cat*marriedw	-0.692 (3.102)	-0.029 (.074)	-2.971 (5.402)	-4.365* (2.497)	-0.051 (0.043)
post98*cat*marriedw	0.088 (2.179)	-0.025 (.050)	-1.652 (3.637)	1.205 (1.489)	0.043 (0.028)
Region FE	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes
Individual FE	no	no	no	yes	yes
Adj. R^2	0.117	0.133		0.002	0.002
N	471570	471570	471570	471570	471570

Notes: The sample includes women aged 30-50 years, who appear in 6 interviews with the same marital status. Sample period 1990-2002. The control group includes regions 1-4, 7-8, 11, 14, 16-18. The vector of control variables contains age, age squared, educational dummies, regional employment rate and GDP per capita. Cluster-robust (at individual level) standard errors are reported in parentheses. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

6 Conclusions

In this paper I analyze empirically the relationship between the rules governing the division of marital property in case of divorce and two economic outcomes of the household: the incidence of marital dissolution and the labor supply decision of intact couples. The rule for the division of marital property at divorce is important because it determines the outside option of spouses, and consequently, their balance of power within the household. According to non-unitary models of the household, the relative bargaining position of spouses matters for the household decision-making process. I argue that unanticipated changes in this rule may alter the incentive of certain couples to dissolve their marriage as well as the labor supply decision of couples that stay together.

The variation in family law across regions in Spain, where different regions have different marital property regimes, offers an ideal setting to study this. While in the majority of regions the default marital property regime is the community of property, in two regions, one of them is Catalonia, the default rule is separation of property.²⁸ Moreover, the Catalan regime was modified twice during the nineties. First, in 1993 an economic compensation for the financially weaker spouse in case of divorce was introduced, which can be interpreted as a step towards a more egalitarian distribution of marital assets in case of divorce. Second, 1998 the scope of marital contract was extended allowing them to contemplate the dissolution of

²⁸This refers to the period analyzed in this paper. The Valencian Community modified its marital property regime in 2008, adopting a separation of property rule.

the marriage, which gave them the freedom of agreeing about how to divide the assets if the marriage breaks up. These two legal modifications can be seen as sources of exogenous variation in spouses' relative bargaining power within the household that can be used address the questions stated before.

I find that the introduction of the economic compensation increased divorce rate in Catalonia by about 13 percent, and part of this effect is reversed after 1998, when contracts can contemplate the possibility of divorce. The net effect remained positive and close to 8 percent until one decade after the first reform. Looking at the dynamics of the response in divorce rates, I find that the impact of the economic compensation reached its maximum between three and four years after its introduction, and then started to decrease. Similar results are obtained when the analysis is performed with separation instead of divorce rate. The results suggest that, although part of the increase in the incidence of divorce can be explained by couples already separated when the reform took place that advanced their divorce proceedings, there was an increase (both statistically and economically) in marital dissolution rates.

I also find that intact couples were affected by the reforms. Wives entitled to a higher share of family assets in case of divorce reduced their labor supply between 0.6 and 2.5 hours per week, depending on the specification. Looking at the effect on the extensive margin, I find a reduction in the probability of employment for married women of about 2 percent that can be attributable to this redistribution of rights over marital assets. These effects are reversed (partially or totally, depending on the specification) when marital contracts are allowed to include provisions referring to divorce. Given that since that moment marital contracts can be used to limit or eliminate the compensation, this was interpreted as lowering wives' bargaining power. Consistent with this interpretation, married women labor supply increased by around 1.2 hours per week, while the probability of employment did it by 2.6 percent.

Overall, these results are compatible with the predictions of the non-unitary approach to household modeling. The relative position of spouses within the household matters to determine household outcomes. Family law has an important role in contributing to determine the bargaining position within a family and then in shaping economic outcomes.

References

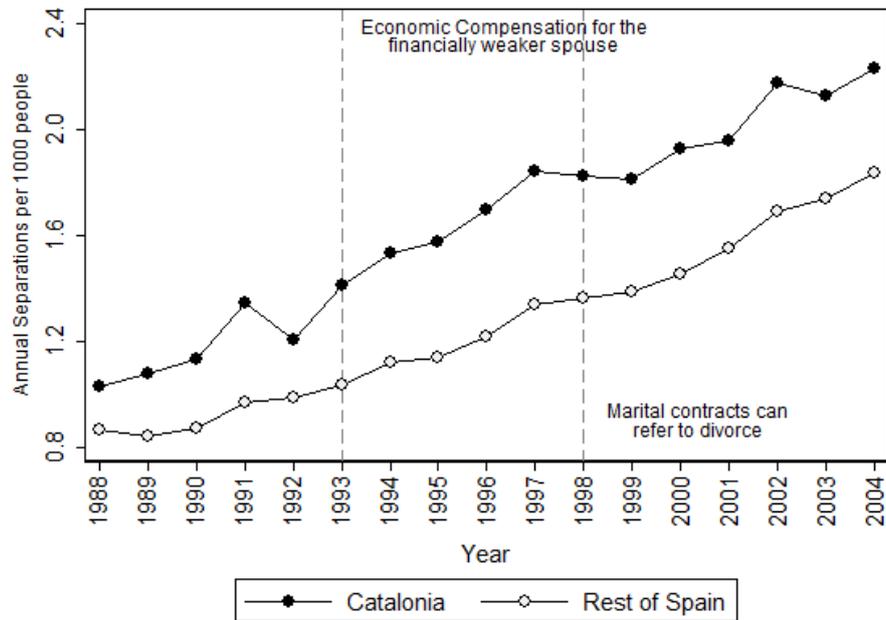
- ALESINA, A., AND P. GIULIANO (2006): “Divorce, Fertility and the Shot Gun Marriage,” IZA Discussion Papers 2157, Institute for the Study of Labor (IZA).
- ALLEN, D. W. (1992): “Marriage and Divorce: Comment,” *American Economic Review*, 82(3), 679–85.
- ANGRIST, J. D., AND J.-S. PISCHKE (2008): *Mostly Harmless Econometrics: An Empiricist’s Companion*. Princeton University Press.
- BECKER, G. S. (1981): *A Treatise on the Family*, no. beck81-1 in NBER Books. National Bureau of Economic Research, Inc.
- BERTRAND, M., E. DUFLO, AND S. MULLAINATHAN (2004): “How Much Should We Trust Differences-in-Differences Estimates?,” *The Quarterly Journal of Economics*, 119(1), 249–275.
- BOELE-WOELKI, K., B. BRAAT, AND I. SUMNER (eds.) (2003): *European Family Law in Action. Volume I: Grounds for Divorce*. Intersentia, Antwerp-Oxford-New York.
- CHIAPPORI, P.-A. (1988): “Rational Household Labor Supply,” *Econometrica*, 56(1), 63–90.
- (1992): “Collective Labor Supply and Welfare,” *Journal of Political Economy*, 100(3), 437–67.
- CHIAPPORI, P.-A., AND O. DONNI (2009): “Non-unitary Models of Household Behavior: A Survey of the Literature,” IZA Discussion Papers 4603, Institute for the Study of Labor (IZA).
- CHIAPPORI, P.-A., B. FORTIN, AND G. LACROIX (2002): “Marriage Market, Divorce Legislation, and Household Labor Supply,” *Journal of Political Economy*, 110(1), 37–72.
- DREWIANKA, S. (2008): “Divorce law and family formation,” *Journal of Population Economics*, 21(2), 485–503.

- FRIEDBERG, L. (1998): “Did Unilateral Divorce Raise Divorce Rates? Evidence from Panel Data,” *American Economic Review*, 88(3), 608–627.
- GALIANI, S., P. GERTLER, AND E. SCHARGRODSKY (2005): “Water for Life: The Impact of the Privatization of Water Services on Child Mortality,” *Journal of Political Economy*, 113(1), 83–120.
- GONZÁLEZ, L., AND T. K. VIITANEN (2009): “The effect of divorce laws on divorce rates in Europe,” *European Economic Review*, 53(2), 127–138.
- GRAY, J. S. (1998): “Divorce-Law Changes, Household Bargaining, and Married Women’s Labor Supply,” *American Economic Review*, 88(3), 628–42.
- GRUBER, J. (2004): “Is Making Divorce Easier Bad for Children? The Long Run Implications of Unilateral Divorce,” *Journal of Labor Economics*, 22(4), 799–833.
- HECKMAN, J., AND V. HOTZ (1988): “Choosing Among Alternative Nonexperimental Methods For Estimating The Impact Of Social Programs: The Case Of Manpower Training,” University of Chicago - Economics Research Center 88-12, Chicago - Economics Research Center.
- KAPAN, T. (2008): “Property Division Laws: The Effects on Labor Supply and Household Bargaining,” Ph.D. thesis, Columbia University.
- LAMARCA I MARQUÉS, A. (2003): “Separación de bienes y desigualdad patrimonial: la compensación económica por razón de trabajo,” Working Paper of Catalan Law 2, InDret.
- LAMARCA I MARQUÉS, A., E. FARNÓS AMORÓS, A. AZAGRA MALO, AND M. ARTIGOT I GOLOBARDES (2003): “Separate Property and Family Self-Determination in Catalonia: A Peaceful Model under a Change?,” Working Paper of Catalan Law 164, InDret.
- LUNDBERG, S., AND R. POLLAK (1993): “Separate Spheres Bargaining and the Marriage Market,” *Journal of Political Economy*, 101(6), 988–1010.
- LUNDBERG, S., R. POLLAK, AND T. WALES (1997): “Do Husbands and Wives Pool Their Resources? Evidence from the United Kingdom Child Benefit,” *Journal of Human Resources*, 32(3), 463–480.

- MATOUSCHEK, N., AND I. RASUL (2008): “The Economics of the Marriage Contract: Theories and Evidence,” *Journal of Law & Economics*, 51(1), 59–110.
- MCELROY, M. B., AND M. J. HORNEY (1981): “Nash-Bargained Household Decisions: Toward a Generalization of the Theory of Demand,” *International Economic Review*, 22(2), 333–49.
- MECHOULAN, S. (2006): “Divorce Laws and the Structure of the American Family,” *Journal of Legal Studies*, 35, 143–174.
- PETERS, H. E. (1986): “Marriage and Divorce: Informational Constraints and Private Contracting,” *American Economic Review*, 76(3), 437–54.
- RASUL, I. (2006): “Marriage Markets and Divorce Laws,” *Journal of Law, Economics and Organization*, 22(1), 30–69.
- STEVENSON, B. (2007): “The Impact of Divorce Laws on Marriage-Specific Capital,” *Journal of Labor Economics*, 25, 75–94.
- (2008): “Divorce Law and Women’s Labor Supply,” NBER Working Papers 14346, National Bureau of Economic Research, Inc.
- STEVENSON, B., AND J. WOLFERS (2006): “Bargaining in the Shadow of the Law: Divorce Laws and Family Distress,” *The Quarterly Journal of Economics*, 121(1), 267–288.
- WOLFERS, J. (2006): “Did Unilateral Divorce Laws Raise Divorce Rates? A Reconciliation and New Results,” *American Economic Review*, 96(5), 1802–1820.

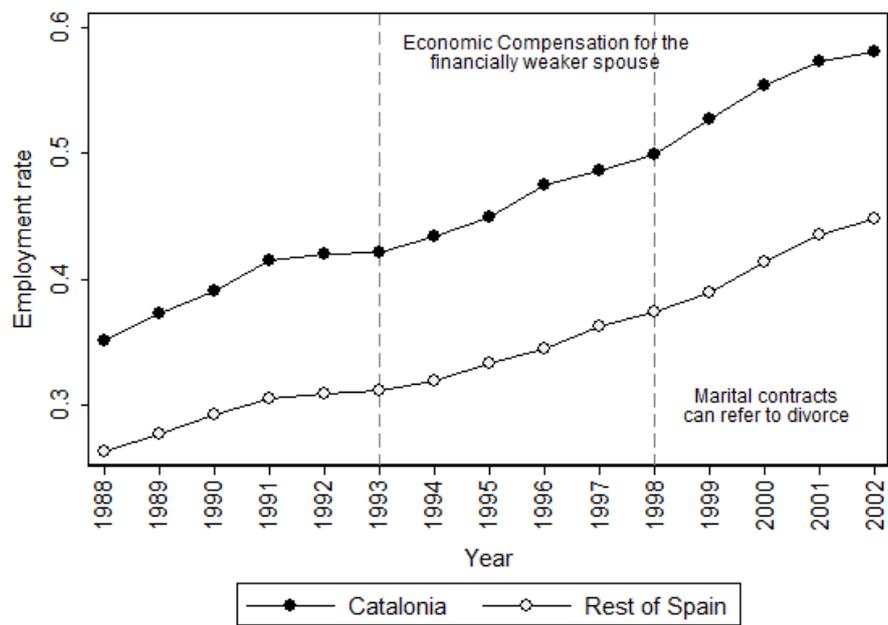
Appendix - Tables and Figures

Figure 4: Separation Rate



Source: Administrative data taken Judicial Statistics (*Consejo General del Poder Judicial*).

Figure 5: Employment rate. Married Women 30-50 years old



Source: Microdata from the Spanish Labor Force Survey, National Institute of Statistics, Spain.

Table 5: Summary Statistics. Married Women 30-55 years old

	Catalonia		Rest of Spain	
	Mean	St. Dev.	Mean	St. Dev.
1-1990 to 3-1993				
Weekly labor hours	38.985	12.929	37.550	15.889
Age	42.479	7.324	42.457	7.357
No education	0.362	0.481	0.395	0.489
Primary school	0.286	0.452	0.288	0.453
Secondary school	0.182	0.386	0.160	0.367
Tertiary/Univ school	0.170	0.376	0.157	0.364
Studying	0.007	0.085	0.012	0.108
Employment rate	0.376	0.010	0.314	0.034
Wife age	39.770	7.660	39.782	7.791
No education (wife)	0.375	0.484	0.420	0.493
Primary school (wife)	0.315	0.465	0.311	0.463
Secondary school (wife)	0.181	0.385	0.158	0.364
Tertiary/Univ school (wife)	0.128	0.335	0.112	0.315
In Labor Force	0.967	0.178	0.953	0.213
Employed	0.922	0.267	0.878	0.327
Obs	39,455		316,327	
4-1993 to 3-1998				
Weekly labor hours	37.904	14.381	36.529	16.881
Age	42.795	7.209	42.823	7.239
No education	0.054	0.226	0.076	0.265
Primary school	0.363	0.481	0.405	0.491
Secondary school	0.341	0.474	0.299	0.458
Tertiary/Univ school	0.241	0.428	0.220	0.414
Studying	0.018	0.131	0.017	0.130
Employment rate	0.372	0.015	0.313	0.038
Wife age	40.190	7.566	40.263	7.600
No education (wife)	0.069	0.254	0.089	0.285
Primary school (wife)	0.344	0.475	0.410	0.492
Secondary school (wife)	0.354	0.478	0.314	0.464
Tertiary/Univ school (wife)	0.233	0.423	0.187	0.390
In Labor Force	0.963	0.189	0.948	0.221
Employed	0.897	0.304	0.856	0.351
Obs	49,621		418,189	
4-1998 to 4-2002				
Weekly labor hours	39.864	12.484	38.462	15.230
Age	43.344	7.191	43.279	7.063
No education	0.034	0.182	0.058	0.233
Primary school	0.244	0.429	0.300	0.458
Secondary school	0.470	0.499	0.412	0.492
Tertiary/Univ school	0.252	0.434	0.231	0.422
Studying	0.023	0.151	0.020	0.139
Employment rate	0.421	0.012	0.360	0.040
Wife age	40.925	7.392	40.885	7.322
No education (wife)	0.040	0.196	0.064	0.244
Primary school (wife)	0.232	0.422	0.296	0.457
Secondary school (wife)	0.484	0.500	0.431	0.495
Tertiary/Univ school (wife)	0.244	0.430	0.209	0.407
In Labor Force	0.964	0.187	0.945	0.228
Employed	0.936	0.245	0.897	0.304
Obs	39,753		354,857	

Table 6: Summary Statistics. Married Men 30-55 years old

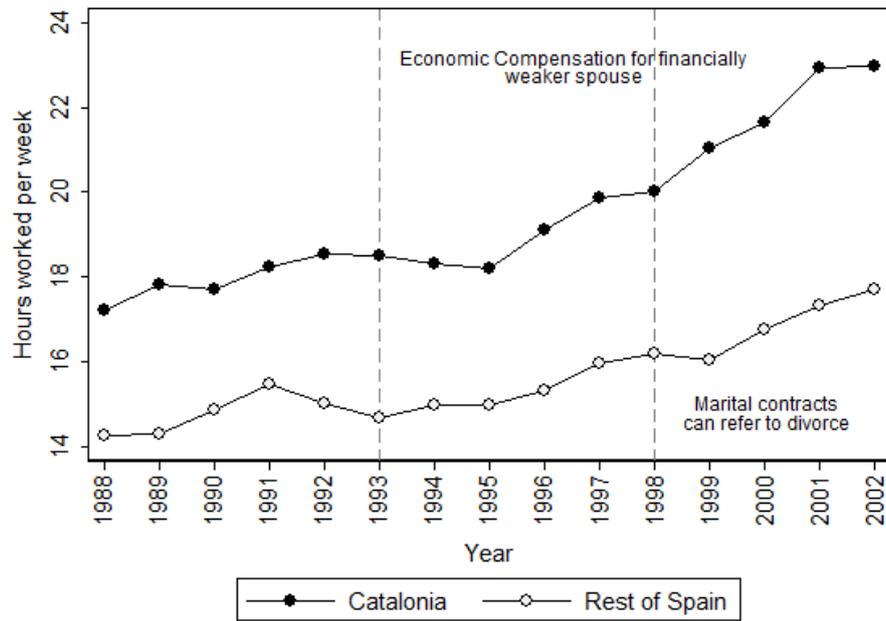
	Catalonia		Rest of Spain	
	Mean	St. Dev.	Mean	St. Dev.
1-1990 to 3-1993				
Weekly labor hours	15.237	19.367	11.467	18.501
Age	42.185	7.321	42.178	7.433
No education	0.410	0.492	0.458	0.498
Primary school	0.317	0.465	0.309	0.462
Secondary school	0.158	0.365	0.134	0.340
Tertiary/Univ school	0.114	0.318	0.100	0.300
Studying	0.009	0.095	0.014	0.118
Employment rate	0.259	0.007	0.196	0.035
Husband age	45.258	8.424	45.218	8.477
No education (husband)	0.389	0.488	0.425	0.494
Primary school (husband)	0.286	0.452	0.285	0.452
Secondary school (husband)	0.163	0.369	0.141	0.348
Tertiary/Univ school (husband)	0.162	0.368	0.149	0.356
In Labor Force	0.483	0.500	0.381	0.486
Employed	0.411	0.492	0.303	0.460
Obs	41,184		328,949	
4-1993 to 3-1998				
Weekly labor hours	16.932	19.604	12.715	18.801
Age	42.293	7.287	42.378	7.339
No education	0.090	0.286	0.110	0.313
Primary school	0.378	0.485	0.442	0.497
Secondary school	0.322	0.467	0.278	0.448
Tertiary/Univ school	0.210	0.407	0.170	0.376
Studying	0.019	0.136	0.022	0.148
Employment rate	0.275	0.014	0.208	0.038
Husband age	45.305	8.415	45.264	8.390
No education (husband)	0.073	0.260	0.096	0.294
Primary school (husband)	0.391	0.488	0.428	0.495
Secondary school (husband)	0.307	0.461	0.266	0.442
Tertiary/Univ school (husband)	0.229	0.420	0.210	0.407
In Labor Force	0.568	0.495	0.452	0.498
Employed	0.464	0.499	0.344	0.475
Obs	52,210		439,215	
4-1998 to 4-2002				
Weekly labor hours	20.066	19.617	15.104	19.259
Age	42.740	7.238	42.640	7.207
No education	0.055	0.228	0.080	0.272
Primary school	0.264	0.441	0.325	0.468
Secondary school	0.456	0.498	0.400	0.490
Tertiary/Univ school	0.225	0.418	0.195	0.396
Studying	0.027	0.164	0.026	0.161
Employment rate	0.330	0.014	0.254	0.045
Husband age	45.586	8.320	45.393	8.142
No education (husband)	0.048	0.213	0.072	0.259
Primary school (husband)	0.273	0.446	0.322	0.467
Secondary school (husband)	0.439	0.496	0.381	0.486
Tertiary/Univ school (husband)	0.240	0.427	0.225	0.417
In Labor Force	0.620	0.485	0.503	0.500
Employed	0.553	0.497	0.416	0.493
Obs	42,477		377,769	

Table 7: Impacts on Married Men Labor Supply

Dependent variable	Ordinary Least Squares		Tobit	Panel-FE	
	Hours (1)	Employment (2)	Hours (3)	Hours (4)	Employment (5)
post93*cat	0.250 (0.298)	-0.000 (0.006)	0.264 (0.326)	-0.800** (0.319)	-0.013* (0.007)
post98*cat	-0.174 (0.274)	-0.002 (0.005)	-0.199 (0.296)	-0.396* (0.241)	-0.007 (0.005)
Region FE	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes
Individual FE	no	no	no	yes	yes
Adj. R^2	0.022	0.035		0.002	0.002
N	255170	255170	255170	255170	255170

Notes: The sample includes married men aged 30-50 years, who appear appear in 6 interviews with the same marital status. Sample period 1990-2002. The control group includes regions 2, 4, 5, 7, 10-12, 14-15. The vector of control variables contains age, age squared, educational dummies, regional employment rate, and wife-level controls such as age and education. Cluster-robust (at individual level) standard errors are reported in parentheses. *, **, and *** denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Figure 6: Usual weekly hours. Wives of firm's owners



Source: Microdata from the Spanish Labor Force Survey, National Institute of Statistics, Spain.