Marriage Dissolution: property rights or social ties?

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Abstract

The division of property rights affects the probability of marriage dissolution. However, this effect depends on the institutional environment. Throughout a comparative institutional analysis, we use data from the 2000 censuses of Brazil and the United States. The results, following previous economic predictions indicating that the probability of divorce, both in Brazil and the United States, is negatively related to the amount of property and income, as well as to the costs of leaving the relationship. Additionally, we found that this relation is moderated by the enforcement and coercion degrees presents in each country, including divorce laws (formal institutions) and social coercion, as religious orientation (informal institutions). Specifically for social coercion, our results present that religious orientation is relevant for marital dissolution in both countries. Nonetheless, the divorce laws and formal institutional environment as a whole, reduce the probability of divorce in Brazilian jurisdiction, but do not affect the divorce occurrence among the USA couples, even when controlled for the differences between state legislation. We suggested that this difference on law' impact is related with a greater subjectivity on North American law, if compared with the written Brazilian code.

Keywords: Marriage Contract; Marital Dissolution; Institutional Environment.

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1. Introduction

In this paper we aim to expand the microeconomic analysis of marriage by verifying the impact of institutional coercion imposed on the relationship, its maintenance and its dissolution in different institutional environments. For that reason, we verified the impact of economical factors (work, income and assets) and institutional factors (civil and social coercion) on the probability of divorce in two different institutional contexts: Brazil and the United States.

According the microeconomic theory, marriage is a relationship among two people seeking higher welfare and a secure social environment to procreate and raise their own children (BECKER, 1973, 1974). These people invest their time to generate a specific asset called marital-specific capital by Becker *et al* (1977). These investments, like children, love, sex, companionship and time, increase the costs of divorce and decrease the marital instability (BECKER et al, 1977). They represent sunk costs that, in case of divorce, are the higher costs of leaving the relationship. Therefore, we questioned if the lack of investment in the relationship and consequently low accumulation of *marital-specific capital* motivates the marriage dissolution, and, if this effect is the same between the analyzed countries.

Far to be a personal arrangement, in the Western practices, marriage is regulated by the State in form of laws, and by other formal institutions as church and family. It is also regulated by customs and shared beliefs that, as informal institutions, reflect the social learning that are widely diffused to the population as a behavioral standard (GREIF, 2005; AOKI, 2001).

These formal and informal institutions represent an efficient ex-ante information mechanism and the guarantee of enforcement ex-post. This is accomplished by reducing the uncertainty and restriction and by monitoring of people's behavior (BROOKS, 2002; NORTH, 1990). Divorce will occur in larger or smaller proportion depending on these behavioral standards in the couple's society.

Among other beliefs, the Christian faith seems to be an efficient restriction mechanism of social behavior. Among Christian beliefs, there is a difference in conviction between Catholics and Protestants that generates different enforcement mechanisms, as well as producing different values and incentives (ARRUÑADA, 2004). Generally, in the Catholic faith, salvation is achieved through the distribution of income and good behavior, while in the Protestant faith this is in virtue of faith and the follower's productivity (SHERKAT and ELLISON, 1999). According these, non religious or Protestant people are more prone to divorce then Catholic people (DIEKMANN and ENGELHARDT, 1999; BUMPASS and SWEET, 1972). Consequently, we verified if the lack of coercion and social enforcement or the lack of legal guarantees of property rights by the law is related with divorce occurrence.

We introduce the theoretical analysis of marriage from the point of view of economical theory including institutional aspects in the analysis. Subsequently we related the concepts of property rights with the relational contract approach (GOLDBERG, 1976; MASTEN, 1999); comparing Brazilian and North American marriage's law.

We carried out statistical analysis of the data from the demographic censuses of 2000 in Brazil and the United States. The choice of the countries is justified by the different institutional environments. Brazil has a civil law legal system and predominantly Catholic religious orientation while the United States has a common law legal system and predominantly Protestant religious orientation.

2. Economical and Institutional Analysis of Marriage

According the economical theory, families are explained as a group of people that objective to maximize their own welfare and production of their own commodities in marriage. The best allocation is a result of the balance of the couple's well-being, where preferences are maximized (BECKER, 1973, 1974; COLE, MAILATH and POSTLEWAITE, 1992; BURDETT and COLES, 1997; COLES and SMITH, 1998; MAILATH and POSTLEWAITE, 2006). The great incentive of marriage is the production of *marital-specific capital*, capital composed by the investments made in the relationship, which is specific and exclusive to each marriage. The relationship will last while the cost-benefit relationship is favorable and separation will only exist if the compensation of staying married is lower than that of being divorced (BECKER et al, 1977).

However, the value of marital-specific capital differs among different institutional environments. Institutions limit individual's choices (NORTH, 1990), and as a set of shared rules, influence people's decisions (AOKI, 2001), including the selection and maintenance of a spouse and organization of the family unit. In fact, beliefs about marriage are relevant to marital functioning, because they influence people's behavior related to marriage. So, the beliefs that each social group has in love, companionship, raising children or sexual attraction will determine the arrangement of the marriage and the limitations for its continuity.

It is by means of the influence of institutions that the concept of marriage and family differs from one place to another. Even in the western world, the differences among races, social levels, education or religious orientation represent institutions generated by the balance of beliefs that originated from events in the past. These beliefs determine the notion of beautiful, right and pleasant. It is in this environment that the search for the ideal companion whose characteristics are determined by the maximization of well-being occurs with reference to allocation inside the family unit.

We can consider that the set of shared faiths allied to enforcement and coercion mechanisms exerts a determining factor on the maintenance or not a marriage or a household unit. Certainly, the level of instability of a marriage constituted in an environment determined by law, where people believe that marriage should last until "death do us part", is smaller than in an environment where this belief is not so important.

3. Marriage Law as a Long-term contract in Brazil and the United States

Marriages are determined by the union of two people making specific investments for an indefinite period with relatively common objectives regarding return. The expectations of one spouse cannot be exactly the same as those of the other. This possibility exposes the couple to uncertain situations, even if it is a usual relationship based on a minimum common scope with reference to their perspectives: love, companionship, children, and security. Consequently, marriage can be considered a contract that, as well as being incomplete, is relational.

Due to verifiability difficulties of some complex attributes and unexpected future contingencies, this kind of long term agreement contains breaches. Breaches are related to conditions in witch property rights are not clearly and objectively delineated among contractual parties. The reallocation of the property rights or changes in the direction of the arrangement could require a third party to coerce, regulate and supervise the arrangement (MASTEN, 1999). Such characteristics involve the need to use authority mechanisms and behavioral variables like cooperative agreements.

The involvement of such variables makes the contracts still more complex to enforce because they do not present a precise and verifiable set of actions (BROUSSEAU and FARES, 2000). Relational contracts, besides covering long periods, possess structures based on relationships and personal negotiations, mitigating the effects of unspecified attributes when contractual parts may be negotiate and adapt the conditions, constrained by a general condition (GOLDBERG, 1976). In spite of renegotiation of a relational structure is expensive and the unilateral preservation of the original contractual terms is uncertain (MASTEN, 1999), this arrangement permits flexible answers when faced with the existence of specific investments, complex long-term relationships as well as when subject to the existence of ex-post opportunism (FURUBOTN and RICHTER, 2000).

However, marriage as a relational contract operates inside institutional major systems, which we classify in a dichotomy way between common vs. civil law regimes. This keep some differences related to how clear is the rule, or the contractual terms and consequently how subjective is the judgment.

In common law countries (as the USA), the terms of marriage law are implicit, not written or difficult to understand, in case of divorce, the law is interpreted and applied by judges and lawyers (WEITZMAN, 1981). In civil law countries (as Brazil), marriage law is also regulated by the state. However, they possess a formal civil code which the judge interprets and applies within a written body of statutes (MATTEI, 2000).

Although in both cases, as the interpretation of judges and lawyers as the application of the code, are impacted by social beliefs, and also both systems are recognizably elaborated within the limitations of the moral rules of the society at a given period of time (GROSSBARD-SHECTTMAN and LEMENNICIER, 2000). In case of marriage law, we can not say about established social beliefs, once the majority of behavior related to marriage, has being changing from the 1960s until today (COONTZ, 2006). The Brazilian divorce law is from 1977 while the first states of the USA to allow people to get divorce, did it in 1970. Faced with this, a written code can be more enforceable than an unwritten one by reducing uncertainty and subjectivity and by improving the level of coercion.[1]

With reference to the protection of property rights, the divorce law in the common law system tries to maximize the well-being of the parties in the contractual relationship, in order to compensate the opportunity costs generated by marriage decision. The law's objective is to balance the couple's expectation to maintain, both of them, a financial position similar to the one they would have had if the contract had not been broken (DNES, 2000). In some American states, a prenuptial contract is allowed to specify division of financial responsibilities and allocation of property in case of divorce (WEITZMAN, 1981). However, the validity of these contracts is presently the subject of discussion and may not always be accepted by the court (SMITH, 2003).

On other hand, in countries with civil law system, the Civil Code determines the division of the assets in the event of marriage dissolution or death in an attempt to guarantee the ex-post property rights. The couple agrees upon the system of community property (standard contract terms) before the marriage with the possibility of renegotiation existing throughout its course. In case of separation, divorce or death of one of the spouses, the law determines that the chosen system of community property in the act of the marriage will be applied.

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[1] Here, the concept of enforcement is represented by how clear is the code and its incentives, and coercion is the force used to accomplish the code (GREIF, 2005).

In Brazil, the civil code provides contractual options defined ex-ante to guarantee ex-post property rights. Such options can minimize uncertainty and the subjectivity of judicial proceedings.

In the United States, although each state has its own law, the possibility of an ex-ante selection of the regime for division of property rights in the case of dissolution does not exist. Thus, the ex-post guarantees of property rights are the responsibility of lawyers and the judiciary, which may increase uncertainty regarding their relationship to the coercion mechanisms applied (SMITH, 2003), and also may create a structure of incentives for opportunistic behavior between the agents (DNES, 2000).

The system of community property adopted in Brazil allows four kinds of contracts: full community property, in which the spouses share all property held by them before and after the marriage; partial community property, in which just the property acquired after marriage is shared in case of divorce; full separation of property, in which each spouse retains his/her separate property and can dispose it without previous approval of the partner; and final participation of acquisition, where the property acquired after the marriage at the onus of one spouse is subject to mediation. During marriage, the majority of property may be disposed of by each owner. In the case of dissolution, the existing property is divided between the parties. (BRAZIL, 2002). Generally, the Brazilian code is applied, except by the case of Separation of Property contract: the Brazilian Federal Constitution guarantees human dignity and assures that the less successful partner will at least have a place to live. The difference between the Civil Code and the Constitution may imply fewer guarantees in property rights.

Another interesting peculiarity of Brazilian code is the treatment gave to couples that cohabit without marry. This couples can be considered married if one of them prove that they cohabit with intention to constitute family (BRAZIL, 2002). These "unofficial" marriages can have almost the same guarantees of a couple that choose the partial community property contract, although this guarantee depends of the judge, which increase the subjectivity of the process.

As we highlighted before, in the United States, each state has its own divorce law, but, generally speaking, since the 1970s, there are two possible forms of divorce in American states: The traditional divorce by fault of one of the spouses and a no-fault system. In states governed by fault law where one of the spouses requests divorce without the consent of the other, there is need for violation of marital duties to blame the other party, or compensation payment for losses and damages is caused. The application of the law depends exclusively on the evaluation of the judiciary, increasing the asymmetry of information between the parties (WEITZMAN, 1981).

On the other hand, in states with no-fault divorce systems, there is less attrition between the law and the decision of the pair to separate, and the marriage can be dissolved by reason of simple incompatibility, for instance, without more serious accusations (PETERS, 1986; ALLEN, 1992). In this case, two possible alternatives may be mediated by the court: litigious or consensual. In litigation, one of the spouses interrupts the relationship and compensates the other for the damages, while in the case of consensual separation the couple negotiates a separation agreement and divides the property, this kind of contract makes the use of other resources possible besides those of the judiciary, reducing asymmetry of information (WEITZMAN, 1981). Also, there are states where it is possible for the couples chose between the fault and no fault contract.

Some states of the United States consider private contracts of marriage as guidelines in case of divorce, mainly regarding the division of financial responsibilities and allocation of property. However, some statutory systems restrict the freedom of couples to write such

contracts, with a judge having the final word regarding the content. In states where traditional "fault" divorce law is in force, less consideration is given to the content of private contracts by the judiciary, while in states with "no-fault" systems the courts tend to consider them more frequently (SMITH, 2003).

4. Development of Hypotheses

Marriage represents an institution that guarantees the couple's security to maintain and maximize their welfare and raise their children. It is guaranteed by civil coercion, which provides guidelines for the conduct of the parties, and by social coercion, which acts as a common alliance among groups. Even though it is less widespread than civil coercion, the social coercion functions as a behavioral point of reference. Civil coercion works through economic sanctions and guaranteed property rights while social coercion acts directly on the individual well-being of the agents through mechanisms of loss of reputation and ostracism.

From this conception of marriage based on empirical studies considered previously, empirically tested hypotheses are proposed.

Marriage is a relationship established in the market, where two people join together seeking to maximize their welfare, as well as to procreate and raise children (SOUTH and LLOYD, 1995; BECKER, 1973, 1974). The greater the expectation of gains from the relationship, the greater the investments made will be. The investments are represented by the time dedicated to the relationship and to the partner, and production of the family unit's own property (marital-specific capital) and the conception and rearing of offspring (DIEKMANN and ENGELHARDT, 1999; BECKER, 1973, 1974). The accumulation of marital-specific capital increases the expectation of gains from the marriage. However, such investments, although they configure a specific asset of the relationship, represent a sunk cost in the event of divorce (BECKER et al., 1977), so it is a cost of leaving the relationship. Therefore, based on these proposals, we formulated the hypothesis that:

> *(H$_1$) the probability of divorce is decreased by the accumulation of marital-specific capital.*

Marriages can be classified as incomplete and relational contracts due to the high complexity of the relationship established, with focus on the long run, the difficulty in measuring the investments and of renegotiation, the possibility of ex-post opportunism and the difficulty of applying efficient enforcement mechanisms (FURUBOTN and RICHTER, 2000; MASTEN, 1999). Still, the contractual terms and regulation (civil coercion) are imposed by the State, which implies uncertainty and stimulates opportunistic behavior between the parties (SMITH, 2003).

The opportunistic behavior in marriage can appear in front of property and earnings, in case of, the more successful partner, faced with opportunities outside the marriage, judges he or she will gain from opting for a new marriage or by a return to being single. The inexistence of legal coercion mechanisms, allied with the low cost of leaving the relationship, becomes an incentive to get divorce (DNES, 2000). This argument is illustrated for Büchel and Engelhardt (2003) and Trappe and Rosenfeld (2000) that found evidence that in East Germany, the alimony conceded to divorced mothers and their children was an incentive to divorce. At the same time, in West Germany the alimony was not enough for mothers to survive and the employment opportunities were lower, so, there was a negative incentive to divorce. Thus, we derived the hypotheses that:

The probability of dissolving marriage is negatively affected by the existence of property (H_{2a}) and income (H_{2b}). These effects are increased by the property right guarantees provided by the country's legal system (H_{2c}).

Faced with the difficulties of guaranteeing the individual rights in the relationship, institutions represent a way to reduce uncertainty, restricting behavior and molding the interaction between agents (NORTH, 1990). Since marriage not only involves formal rules, but also a system of shared beliefs (HALL, 2006; GREIF, 2005; AOKI, 2001), one's collective set of beliefs about marriage should reflect patterns or themes that, taken together, indicate a particular belief system that is intrinsic to the marital institution (HALL, 2006; DIEKMANN and ENGELHARDT, 1999; BUMPASS and SWEET, 1972).

Religion is identified as an efficient private institution to set standards and rules for integration among individuals, possessing enforcement mechanisms facilitated by the existence of beliefs and dogmas, by proximity and by reputation (GROSSBARD-SHECTTMAN and LEMENNICIER, 2000). Some studies have found that beliefs in specific doctrines have substantial effects on family behavior (BURNS et al, 2001; SHERKAT and ELLISON, 1999; WOODBERRY and SMITH, 1998). In fact, religious institutions usually have explicit normative recommendations about family behavior and organization and it shapes the individual behavior relatives to family and gender (STEVENS, 2001).

Among Christian beliefs, there are significant differences in levels of family roles among members of different religious mores, especially between members of evangelical versus non-evangelical values (BROOKS, 2002). Evangelical or non religious couples have higher marital instability rates than catholic couples (DIEKMANN and ENGELHARDT, 1999). Therefore, we sought to verify whether:

(H_3) the probability of dissolving marriage is affected by social coercion.

5. Data and Method

We used data from the 2000 censuses at the maximum permitted level of disaggregation, in other words, microdata of the countries analyzed: Brazil and the United States. The data were collected by a specific sample of the homes surveyed during the demographic census of each country and allow inferences about the overall population. The questionnaires applied to this sample of homes present demographic characteristics and more detailed socioeconomic information than that of a general order, regarding among other characteristics, family, people and homes.

The choice of the countries implies institutional factors in the relationship in question, and results in reduced loss in the impact on internal validity of the work. This implication deals with treatment of countries with different institutional environments. This differentiation is evident in, among other factors, the distribution of religious orientations among the population and the legal system followed by the countries: The United States, except for the state of Louisiana, has a common law system and a predominantly Protestant religious orientation. In contrast, Brazil has a civil law legal system and mainly Catholic religious orientation.

The sample was built with public data relative to the demographic censuses for the year 2000 made available by the census bureau in each country. In Brazil, the Brazilian Institute of Geography and Statistics (IBGE) provides data on certain household characteristics, including declared religious orientation of the family. In the United States, US

Census Bureau reports the characteristics of each home and residents individually (PUMS, 2000).

The data on the religious orientation in the United States were obtained from ARDA (Association of Religion Data Archives) and are proportionally equivalent to the religious orientation of each state. Thus, while the sample regarding the religious orientation in Brazil is composed of households, in the U.S. it consists of the proportional religious orientation of each state.

These data obtained composed the raw database of this work, which henceforth we will simply refer to as the database for each country separately.

In the databases of the United States and Brazil, we selected the households composed of married couples, separated and divorced persons. In the United States we excluded married couples with a spouse absent at work or who had abandoned the home from the sample because it was not possible to separate such situations. We also excluded households where some of the selected variables were classified as "not applicable" or "traveling".

In the Brazilian database, couples that are or were married but never lived together and those under fifteen years of age were excluded from the observations. The single couples that were living in stable unions during the census were maintained, as the Brazilian law consider them married.

The final sample was composed of 87,720 observations (households) in the United States and 92,075 aggregated data sets of typical homes in Brazil, which represent 495,504 observations (people of reference in the family) when meditated by the frequency.

The variables used differ from country to country. As such, we created representative proxies of each construct for measurement. These proxies were grouped in accordance with the development of the hypotheses and separated into two distinct relative groups regarding their impact on the relationship: variables that are internal and variables that are external to the relationship.

The first group of variables refers to the internal nature of the relationship, represented by proxies particular to the family unit and independent of the social environment. The variables indicative of marital-specific capital (MSC) are treated as explanatory and analyzed through the proxies indicating the presence of children (CHILDREN), time married (MATURE), only for the samples in the USA, and time invested in the workforce (WORK). It is expected that the existence of up to two children under 17 years of age would reduce the probability of divorce, as would the time invested in the relationship. The investment in MSC is added to the time married until about the 17th wedding anniversary (MATURE). We furthermore expected that the invested time in the workforce (WORK) would minimize the investments in MSC[2].

The Brazilian sample does not allow the identification of the children's age. We therefore considered only the number of own children (CHILDREN). With relation to participation in the workforce, we presented person's characteristics as a family reference

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[2] We performed a cluster analysis between the variables that were indicative of the existence of children (ACHILDREN and NCHILDREN) and participation in the workforce (TWORK and EMPLST). This indicated a high correlation between the variables in such a way that couples with a high number of children presented a high participation in the workforce and vice versa. Such a result validated the creation of the factors CHILDREN, indicating children, and WORK, which indicates participation in the work market. This furthermore, allowed verification of the interactive nature of the participation in the workforce and the existence of children as well as the relationship of this interaction with the probability of dissolution of the marriage.

(WORK), classified as "economically active" or "economically inactive". We do not have information concerning time married in the Brazilian sample.

The constructs relative to the existence of property (PROPERTY) and family income (FINCOME) also differed in their treatment from country to country.

The sample from the United States presents the value of own residential property (PROPERTY) for representative groups of this value. The low percentile difference between the groups allowed us to standardize the variables. Each value was converted to a standard score (Z score) to eliminate the bias introduced by the difference in values in the variable and between other variables. The representative variable of family income (FINCOME) received the same treatment.

The Brazilian sample is limited to presenting the condition of occupation of the couple's dwelling: whether it is owned free and clear; a property being paid for; or rented. Therefore, we attributed a categorical scale to the variable (PROPERTY). The variable representative of family income (FINCOME) was standardized as in the American case. In formulating this construct, we only considered the real property owned by the couple represented by their home because data on other assets was not available. However, the value of the home is a good indicator of the overall wealth possessed by the couple.

A second group gathers variables external to the relationship but that impact the decision for dissolution, such as enforcement (legal, social or both) and coercion (legal, social or both). Recall that in our case enforcement is represented by a code and its implicit incentives, and coercion is the force used to accomplish the code (GREIF, 2005).

In terms of legal enforcement, the code varies between countries, and as such so does the configuration of the distribution of property rights (ex ante): who has the right to what. For the sample from the United States, the proxy used to verify the moderating action of legal enforcement to accentuate or not the regulation of the State regarding the marriage contract is the level of guarantee of proportional property rights of the legal system that is adopted (CCOERCION). States with the fault-law, that present the oldest and clear code received the number three; states that adopt both possibilities (fault and no-fault law) and give to couples the possibility to chose their own contract received the number two; and states that adopt just the new and subjective no-fault law receive the number 1 in the scale. We verified the moderating effect of this variable by its multiplication of variables referring to assets and income (PROPERTY*CCOERCION and FINCOME*CCOERCION).

The sample from Brazil allows the verification of the nature of the most recent union of the family in question. Thus, we created dummy variables for couples whose union was made official by civil and religious ceremony; either civil or religious ceremony; and for couples whose union was not made official but can be characterized as a stable relationship (cohabitation). From this classification, we created the proxy CCOERCION, attributing one for civilly registered unions and zero for other forms of union. The database did not allow us to verify the effect of each Brazilian contract, for do not having this information.

In terms of social coercion, the code also varies from country to country, according to the cultural beliefs, which are approximated by the preponderant religious orientation (CATHOLIC, PROTESTANT, NON CHRISTIAN or WITHOUT RELIGION). This was because we believe the concept of the institution of marriage in each religious code influences the probability of its dissolution.

There is no data available on the domestic religious orientation for the American sample. So, we created a proxy proportional to the religious orientation of the state of residence of the family from the Association of Religion Data Archives (ARDA). We

generated proportional vectors of Catholics, Protestants, non Christians and without religious orientation (CATHOLIC, PROTESTANT, NON CHRISTIAN and WITHOUT RELIGION) for each American state.

The Brazilian sample, however, indicates the religious orientation of the head of household, who we assumed would represent the orientation of the family structure. We created the indicative dummy variables of the religious orientation of the family (CATHOLIC, PROTESTANT, NON CHRISTIAN or WITHOUT RELIGION).

In the group of the control variables, we tried to identify those relative to informal coercion. This collective coercion is approximate to the cultural beliefs about the meaning of marriage to a specific religious orientation (GREIF, 1994) and the mechanisms of private informal coercion from existing signs, the performance of religious leaders as judges or referees and penalty risks of loss of reputation (GREIF, 1994 and GROSSBARD-SHECTTMAN and LEMENNICIER, 2000).

The private informal coercion mechanisms were measured differently from country to country. In Brazil, from the information on the nature of the union (civil, religious or both), we created a dummy variable indicating the existence or not of a religious ceremony (WEDDING). We verified the moderating action of the religious ceremony (WEDDING) by crossing this variable with the variables referring to religious orientation (CATHOLIC*WEDDING, PROTESTANT*WEDDING, NON CHRISTIAN*WEDDING or WITHOUT RELIGION*WEDDING). We expect that the existence of a religious ceremony enhances the potential for coercion that is already existent in each religion given the broad monitoring of the environment.

We verified whether the impact of the social coercion among Americans varies with different generations. To do this, we controlled the American tests to verify whether social coercion in the form of the religious belief (CATHOLIC, PROTESTANT, NON CHRISTIAN or WITHOUT RELIGION) enhances the potential for the duration of the marriage (MATURE). So, we crossed the variables (CATHOLIC*MATURE, PROTESTANT*MATURE, NON CHRISTIAN*MATURE or WITHOUT RELIGION*MATURE) to examine the effect of the social coercion in long-lasting marriages.

6. Tests and Results

Considering the binary nature of the dependent variable, the logit and glogit model of probability is used. Table 1 presents the results[3].

(Insert table 1 here)

We found that in Brazil (tests 1 and 2), the presence of children (CHILDREN) is positively related to the incidence of divorce. This evidence can be a reflection of the larger average number of children in the Brazilian household sample. The evidence of Becker et al. (1977) showed that the negative impact of the existence of children on the probability of

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[3] We tested the coorelation between variables using Pearson's Correlation Matrix and found a negative correlation of approximately 0.7 between the CATHOLIC and PROTESTANT variables in both samples. This was expected considering that the number of people in the sample that were neither Catholics nor Protestants was very small. The risks of multicolinearity are minimized by the size of the sample and further robust tests performed. The other variables did not present significant correlations greater than 0.6.

dissolution of marriage is only observed in families with up to two children. When this number of children is surpassed, this impact is neutralized, and can even become positive. The families studied in the Brazilian sample have on average three children (three times more than American families). This difference is certainly responsible for the diverging result, so there is no conflict with the proposed theory. We verified the same causal relationships with Brazilian families with at maximum one child and Brazilian families and American families with lower incomes and the result was as forecasted (not showed test).

The participation of the reference person of the family in the workforce (WORK), shows a negative relationship with the probability of dissolution of the marriage. This result is an indication that in Brazil the participation in the workforce is seen as a measure of security and a guarantee of family stability in face of the difficulties of a country with a large contingent of poor people. Further evidence of this supposition was found in tests with low-income American families, which presented a similar relationship between participation in the workforce (WORK) and the probability of the dissolution of the marriage (not showed test).

The American results (tests 3 and 4) attest to the fact that the presence of children under 17 years of age (CHILDREN) minimizes the probability of dissolution of their parent's marriage. The same is true in older marriages (MATURE), which implies a higher risk of divorce. This can be consequence of the risk of loss of contact with the children in case of divorce, which is minimized after they are grown and leave home. Children's growth and their leaving home coincide with a longer marriage time (MATURE), as well as lower investment in the marital-specific capital. As proposed by Becker et al. (1977), the lower the investments in the marital-specific capital, the higher the probability of divorce.

In conformity with our first hypothesis, a greater participation in the job market (WORK) in the USA implies a higher probability of dissolution of the union. Such evidence is demonstrated by the sample, which provides information about both spouses' participation in the workforce as well as in the time dedicated to it. Here, we can infer that less dedication to the home, even for professional reasons, results in a lower investment in the marriage, thereby increasing the divorce risk.

Given the inverse correlation of the variables, we examined interactivity of the participation in the workforce (WORK) and the existence of children (CHILDREN) by crossing these variables (WORK*CHILDREN). We found evidence that participation in the workforce neutralizes the existing negative relationship between the presence of children (CHILDREN) and the probability of dissolution of the marriage in the United States. The Brazilian tests also indicate a neutralizing effect of the existence children (CHILDREN) and participation in the workforce (WORK) when these variables are crossed (WORK*CHILDREN). Such a result suggests that the demand for attention by the children and the job market results in a lower investment in the marriage, implying an increase in the probability of fail.

The evidence indicates that the existence of property and family income (PROPERTY and FINCOME) are negatively related to the occurrence of divorce in the United States, independent of civil coercion (CCOERCION). This, however, did not present any statistically significant relationship with the probability of marriage dissolution of that country. This suggests that the American laws have weaker guarantees of property rights regarding the dissolution of marriage. This reduced guarantee is due to the uncertainty generated by the absence of a specific contract imposed by a uniform civil code, and consequently decreases the permissibility of the coercion mechanisms employed by the State. Therefore, the American legal environment does not seem to be related to the couple's decisions on whether to separate or not.

On the other hand, the significant relationship between assets (PROPERTY) and earnings (FINCOME) and the risk of divorce may be an indication of the fact that couples anticipate the use of the norms and customs of their own institutional environments and behave accordingly.

There is no evidence of a significant relationship between family income (FINCOME) itself and the occurrence of divorce in Brazil. This is an indication that the well-being provided by income refers to its consumption during the relationship, or to its transformation into goods. The negative and significant relationship between this variable (FINCOME) and the probability of divorce in the USA may be due to the fact that the law of some states imposes alimony payments to the less successful partner of the relationship in case of rupture.

In both countries, the existence of assets (PROPERTY) is negatively related to the probability of dissolution of marriage. Also, the relationship regarding family income (FINCOME) attains its full potential through the moderating action of civil coercion (CCOERCION), which indicates the negative effect of the existence of assets (PROPERTY) and attributes significance and a negative effect to the relationship between family income (FINCOME) and the chances of divorce.

At the same time, the results of the Brazilian and American tests regarding the moderating action of civil coercion (CCOERCION) show a different impact on the institutional response of individuals. In spite the fact that marriage in Brazil may also be regulated by the State, the existence of contractual options ex-ante seem to minimize the uncertainty and the subjectivity of judiciary proceedings (the absence of a common-law code), reducing the risk of ex-post opportunistic actions.

Perhaps due to this macro level of analysis, social coercion among Americans only showed statistical significance regarding the Protestant religious orientation (PROTESTANT). In this case, the Protestant social environment which is predominant or almost dominant in the majority of American states is negatively related to the breaking of the marital relationship, independent of interference from other variables or other religious orientations. Such a result may suggest that the Protestant environment (PROTESTANT) acts as a coercing factor on the incidence of divorce in a determined society even in families with different religious orientations. We tested (not showed) this conclusion by searching for the same causal relationships among North American states. We divided the sample into Catholic states, Protestant states and states Without Religion. In consonance with the presented results, only the Protestant states presented statistical significance.

We used control variables to determine whether marriages of longer duration also undergo substantial influence from the social environment within a determined religious orientation (CATHOLIC*MATURE, PROTESTANT*MATURE and NON CHRISTIAN*MATURE). Such influence is confirmed only by Catholic beliefs. In other words, evidence (test 4) indicates that coercion of the Catholic social environment (CATHOLIC) enhances the potential of the maturity of the relationships, which can be related to a particular generation in itself and not properly to the age of the relationship.

There is evidence that Brazilians are more susceptible to social coercion than Americans. We found that the Catholic faith (CATHOLIC) by itself is negatively related to the probability of divorce. At the same time, Protestant (PROTESTANT) or non Christian (NON CHRISTIAN) orientation is positively related to the probability of dissolution of marriage. This may be due to the fact that some Brazilian Protestant religions do not prohibit divorce.

Similarly, the existence of a religious ceremony (WEDDING) seems to reinforce the negative relationship between social coercion and divorce. As the incidence of religious marriage, only non Christian's faiths showed a positive impact on the probability of dissolution.

Generally speaking, the impact of social coercion in Brazil and the United States is more prominent than civil coercion when referring to minimizing the chances of divorce. Such a result reinforces the supposition of Grossbard-Shecttman and Lemennicier (2000), who claim that the enforcement mechanisms and informal coercion exercised by religious groups can be more efficient than the State regarding marriage contracts. This is due to signaling, judgment on the part of religious leaders and of the community as a whole and afraid of penalties such as loss of reputation.

As one more method to check the institutional differences between the countries analyzed, we tested the relationship between variables that are internal to the relationship, without the interference of external ones. We also tested the inverse relationship, only the external variables without interference of the variables that are internal to marriage in each country. The results are presented in Table 2.

(Insert table 2 here)

The evidence indicates differences in the impact of the institutional environment of Brazilians and Americans. We found that the impact of endogenous variables on Brazilians (test 6) is statistically significant and follows a correlative tendency observed in other tests: civil coercion (CCOERCION), Catholic social coercion (CATHOLIC) and religious ceremony (WEDDING) are negatively related to the probability of dissolution of the marriage, while other forms of social coercion (PROTESTANT and NON CHRISTIAN), are positively related to the probability of divorce. At the same time, the American tests (test 8) showed an almost total absence of significant, representative and robust statistics in the absence of endogenous variables to the relationship.

If we invert the analysis, the result is also inverted. In Brazil, the absence of endogenous variables in the relationship (test 5) reduces the representation of the model substantially despite the fact that the relationship among the variables remains coherent with other tests and is statistically significant. The impact of the absence of endogenous variables in the United States (test 7) in practical terms does not affect the significance, robustness and representation of the model.

From these results, we can infer that Brazilians are more susceptible to institutional questions than Americans regarding the decision to maintain a marriage or not. Apparently, Americans are affected by individual questions that are internal to their family group, while Brazilians behave in a more social way, looking for approval in the social environment to make their family decisions.

6. Conclusion

We set out to examine through comparative institutional analysis the impact of the institutional environment and of the division of property rights of marriage instability. We considered that marriage represents a relationship, where spouses join in order to maximize their well-being to find security to live and raise their children. Thus, the matrimonial

relationship is treated as an incomplete relational contract that feels the influence of institutional factors in its constitution, maintenance and dissolution.

The starting point was common hypotheses to Brazil and the USA, trying to discover empirically the implications of the costs of leaving the relationship, the existence of property and income, the dependence on civil coercion imposed by the country as well as of the impact of social coercion on the probability of marital instability.

When referring to civil and social coercion of each country, we found evidence that the institutional environment affects the probability of dissolution of marriage. Even differentiation in the family design, originating from of belief in rules of conduct particular to each environment, seems to affect the result of arrangement.

We could observe this in practically all tests preformed. For example, in Brazil the average number of children per family is higher than in Unites States. Consequently, the impact of this difference on the occurrence of divorce is opposite to that in the United States. The same happens with participation in the workforce, where the incentive to maintain marriage in Brazil is potentially a determining factor for its failure in the United States.

The negative actions of civil coercion, as well as its increased impact on the relation of property and income on the risk of divorce turned out to be significant among Brazilians and insignificant among Americans. This evidence attests to the inefficiency of the State in common law jurisdictions in regulating marriage contracts, as proposed in the studies of Weitzman (1981), Grossbard-Shecttman and Lemennicier (2000), Schwartz (2002) and Smith (2003). This inefficiency in relation to civil law jurisdictions is mainly due to the increased uncertainty and subjectivity attributed to the absence of regulated contractual terms of the marriage relationship in the common law, which causes greater uncertainty regarding enforcement because of the variety of state laws and greater discretion of the courts in interpreting the will of the parties, as expressed in prenuptial agreements or otherwise.

Faced with the inefficiency of the legal environment in guaranteeing the property rights of the parties, it seems that Americans look for internal solutions or solutions defined previous to marriage to protect the investments made in the relationship. So, in this context they are less susceptible to the institutional environment than Brazilians, who are apparently more sensitive to the legal and collective sanctions and punishments for loss of reputation.

As a suggestion for further research, we can mention the importance of expanding this analysis to other Western countries and including countries with Oriental cultures as a way to increase the external validity of the work.

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VARIABLE	BRAZIL		USA	
	Test 1	**Test 2**	**Test 3**	**Test 4**
WORK	-1.70 *** (0.04)	-1.70 *** (0.04)	0.26 *** (0.02)	0.26 *** (0.02)
CHILDREN	0.09 *** (0.01)	0.09 *** (0.01)	-0.23 *** (0.02)	-0.23 *** (0.02)
WORK*CHILDREN	0.23 *** (0.01)	0.23 *** (0.01)	0.78 *** (0.02)	0.78 *** (0.02)
MATURE			1.50 *** (0.03)	1.52 *** (0.13)
PROPERTY	-0.09 * (0.05)	-0.11 *** (0.04)	-0.36 *** (0.07)	-0.37 *** (0.07)
FINCOME	0.00 (0.03)	0.00 (0.03)	-1.12 *** (0.11)	-1.12 *** (0.11)
CCOERCION	-0.25 *** (0.04)	-0.25 *** (0.04)	-0.01 (0.03)	-0.01 (0.03)
PROPERTY*CCOERCION	-0.17 *** (0.02)	-0.16 *** (0.02)	-0.06 0.04	-0.05 0.04
FINCOME* CCOERCION	-0.05 ** (0.02)	-0.05 *** (0.02)	-0.03 (0.05)	-0.03 (0.05)
CATHOLIC	-1.62 *** (0.04)	-1.69 *** (0.03)	-0.02 (0.14)	0.20 (0.21)
PROTESTANT	0.48 *** (0.04)	0.41 *** (0.03)	-0.82 *** (0.15)	-1.01 *** (0.23)
NON CHRISTIAN	1.11 *** (0.07)	1.04 *** (0.05)	-0.14 (0.19)	-0.43 (0.30)
WEDDING	0.20 *** (0.06)			
CATHOLIC*WEDDING	-0.81 *** (0.07)	-0.64 *** (0.05)		
PROTESTANT*WEDDING	-0.26 *** (0.07)	-0.08 *** -0.04		
NON CHRISTIAN*WEDDING	0.23 ** (0.10)	0.41 *** -0.08		
CATHOLIC*MATURE				-0.56 ** (0.28)
PROTESTANT*MATURE				0.32 (0.29)
NON CHRISTIAN*MATURE				0.45 (0.38)
CONSTANT	0.47 *** (0.09)	0.57 *** (0.09)	-2.89 *** (0.08)	-2.89 *** (0.11)
Wald	24243.59	14308.52	6451.94	6494.23
F and Prob > F	0.00	0.00	0.00	0.00
Adjusted R^2	0.62	0.62	0.18	0.18
Root MSE/Log likelihood	0.99	0.99	-25883.29	-25875.01

Note: Logistic function log (P/1-P) =βX. Standard errors (Bootstrap and Robust) in brackets.

*, **, *** Significantly different from zero at the 10%, 5% and 1% level, respectively.

Table 1: Impact of the internal and external relationship variables on the probability of divorce (DIVORCE)

VARIABLE	BRAZIL		USA	
	Test 5	Test 6	Test 7	Test 8
WORK	-1.46 *** (0.12)		0.27 *** (0.02)	
CHILDREN	0.08 (0.01)		-0.23 *** (0.02)	
WORK*CHILDREN	0.21 *** (0.02)		0.79 *** (0.02)	
MATURE			1.50 *** (0.03)	
PROPERTY	-0.48 *** (0.04)		-0.45 *** (0.03)	
FINCOME	-0.02 (0.03)		-1.17 *** (0.05)	
CCOERCION		-0.46 *** (0.05)		-0.02 (0.01)
CATHOLIC		-1.46 *** (0.05)		-0.13 (0.13)
PROTESTANT		0.53 *** (0.04)		0.06 (0.14)
NON CHRISTIAN		0.93 *** (0.05)		0.17 (0.17)
WEDDING		-0.12 *** (0.04)		
CATHOLIC*WEDDING		-0.77 *** (0.09)		
PROTESTANT*WEDDING		-0.22 *** (0.08)		
NON CHRISTIAN*WEDDING		0.21 ** (0.10)		
CONSTANT		-0.46 *** (0.10)	-3.10 *** (0.03)	-1.99 *** (0.06)
Wald	355	6602.27	6418.00	5.78
F and Prob > F	0.00	0.00	0.00	0.21
Adjusted R^2	0.14	0.47	0.18	0.00
Root MSE/ Log likelihood	1.51	1.21	-25919.35	-31472.87

Note: Logistic function log(P/1-P)=βX. Standard errors (Bootstrap and Robust) in parentheses.

*, **, *** Significantly different from zero at the 10%, 5% and 1% level, respectively.

Table 2: Independent impact of the internal and external relationship variables on the probability of divorce (DIVORCE)