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Personal Traits, Empowerment and Violence Dynamics within the Family: A Theoretical Analysis

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Personal Traits, Empowerment and Violence Dynamics within the Family: A Theoretical Analysis

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Abstract

Divorce has increased significantly in recent years. Evidence in the USA suggests a 400% growth in the percentage of divorced individuals compared to married ones between 1960 and 2015. The emotional behavior of partners, which oftentimes ends up in reciprocal verbal aggression and physical violence has emerged as one of the main explanations for the growing divorce rate. The goal of this work is to theoretically explain the relation between emotional behavior, empowerment and domestic violence. For such purpose, we build a general equilibrium model where family violence is the result of both social behavior and personal traits. We demonstrate that a psychosocial follow-up policy of aggressors leads to a family violence reduction in its intensive margin, also resulting in an increase in remarriage rates. At the same time, a female empowerment policy leads to a decrease in the extensive violence margin and an increase in divorce rates.

KEYWORDS: Divorce and Remarriage; Domestic Violence, Female Empowerment, Financial Development.

JEL CLASSIFICATION: J24; J31; J38; O11

1   Introduction

There are many reasons that lead couples to move one step forward in their relationships. The will to have children, the decision to build a life together or even the need for reciprocal care and company during old age, seem to be the main reasons that result in the construction of a new home. Although for some, marriage still represents a pact of eternal love, economics literature sustains that marriage may also be seen as a financial and rational decision that may end some day. Marriage may even represent insurance against unemployment or a more efficient production unit of domestic consumption goods (Weiss (1997)).

The fact is that most families around the world still share the same roof. However, building a new family does not necessarily mean the formalization of marriage in the strict sense of the word anymore. Since 1950, the mass of individuals who decide to postpone marriage or even not get married at all has been increasing. Cohabitation has become more and more the rule rather than the exception in most households.

According to Lundberg and Pollak (2013), relationships that generally end in marriage are decreasing, while the divorce rate in the United States is growing. Authors suggest that intertemporal commitments traditionally related to marriage are being affected by recent changes in social rules and by the new laws that support women and the family. The concept of cohabitation, which in the past was unacceptable by the social standards of the old days, as well as the easy access to divorce, has left individuals less eager to deal with inadequate partner behavior. Greenwood et al. (2016) for example, show evidence of a 400% increase in the ratio between divorced individuals and those still married in the USA between 1960 and 2015. These figures are even more bigger if we only consider the least educated social class.

The partners' emotional behavior, which oftentimes ends in mutual aggression and physical violence, has emerged as one of the main reasons for the growing divorce rates. Card and Dahl (2011) for instance, documented that individuals who suffer strong disillusions are more likely to get involved in violent acts against their relatives. Authors also highlight that domestic violence is more prevalent during weekends, when alcohol and drug intake increases[1].

In a recent study on the effects of aggressiveness within families, Bowlus and

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[1]There are several other mechanisms proposed in literature to explain the recent growth in the divorce rate. The female liberation movement, the sexual revolution and the adoption of less restrictive laws, together with a higher female participation in the labor force, infidelity and financial problems, are some of the possible explanations for this phenomenon. See Stevensson and Wolfers (2007) and Browning et al. (2014) for more on this.

Seitz (2006) verified that the most violent relationships are those in which there is an initial period of reciprocal aggressions. This process, which begins with marriage or with a mere cohabitation, continues until the beginning of verbal and physical violence. Authors observed that individuals who had been abused learn the consequences of their decisions, becoming silent victims impotent before their abusing partners unless they leave home.

According to McAdams and Pals (2011) there are five psychological profiles that portrait individual personality. The first one is defined as openness, which characterizes the level of individual knowledge and interest in the discovery of new experiences. The second profile, conscientiousness, is related to the level of commitment to rules and the respect for social standards. According to the author, this attribute defines the individual level of responsibility and personal organization. The third profile is agreeableness, which is related to the personal desire to build harmonious relationships with the people around. People with this trait are relatively more reliable and cooperative. The fourth profile is extraversion, which is related to the level of social interaction. In general, the most extroverted individuals are those who are more communicative, energetic and assertive. Finally, the last personality trait, neuroticism, has to do with people's emotional stability level.

Although there may exist an a priori impression that emotionally unstable individuals are those who are more aggressive, there is evidence in behavioral psychology that agreeableness is the personal trait that is most closely related to aggressiveness and violent behavior. According to Barlett and Anderson (2012), the lower this trait in each individual personality definition, the higher the probability of becoming violent after undergoing a stressful event. According to these authors, a negative relation between conscientiousness and aggressiveness is also verified in literature. At the same time, a positive association between neuroticism and aggressiveness was found, not being found any interactions between openness, extraversion and violent behavior.

According to data available for European countries, nearly 25% of women in Europe have already been victims of some kind of physical or emotional abuse. In the USA, for example, the numbers are even more alarming as nearly 33% of all researched women said to have been raped at least once since the age of 18 (Brassiolo (2016) and Eswaran and Malhotra (2011)). With regards to violence costs, the Center of Disease Control data suggests that direct and indirect costs of domestic violence in 2003 were around 6 billion dollars the USA.

A stylized fact that dominates domestic violence literature suggests that a large number of spouses who suffer aggressions generally return home after some time

away, withdrawing all criminal accusations against their abusive partners. According to Strube (1998) 25 to 75% of all women who are victims of domestic violence return to their partners after a short time apart.

There is no doubt that a policy aimed at simplifying the dynamics of divorce may be efficient in lowering domestic violence levels. As this policy reduces victim's costs of leaving the abuser, the divorce threat becomes more credible. However, financial dependency of some spouses, as well as the presence of young children among other reasons, suggest that something more is necessary in order to understand the problem of domestic violence (Tauchen and Witte (1995)). Brassiolo (2016) for instance, shows that although this policy has a significant impact on childless families by reducing abuse and increasing divorce rates, the same is not observed for the case of families with children. The need to live with the abusing partner because of the children reduces the effectiveness of this type of policy.

The main goal of this article consists of studying this aforementioned evidence. We are interested in analyzing the reasons that make a woman victim of violence return to live with his aggressive partner at the same roof.

According to data supplied by the World Health Organization introduced in Table 1, the emotional connection with the abusing partner is the main reason to return home, with an average of 23.5%. Forgiveness appears in second place with nearly 17% of cases while the expectation of behavioral changes in the aggressive partner is mentioned in nearly 10% of cases as a reason to return home. If we consider that returning home after a brief breakup involves both forgiveness and the hope for behavioral changes in the partner, we have that around 27% of comebacks are explained by these factors.

	Changes	Forgiviness	Love
Bangladesh	7,1	16,5	24,5
Brazil	14,0	24,0	22,7
Japan	16,3	26,1	12,0
Namibia	14,3	16,6	36,9
Peru	6,2	10,8	8,9
Serbia	9,2	10,8	17,7
Thailand	1,5	11,9	41,8
Average	**9,8**	**16,7**	**23,5**

Table 1: Reasons for Returning Home after a Physical Abuse
Source: World Health Organization, 2001 - 2003.

In our model, introduced later on, the state plays a key role in the support to abused victims and in psychosocial counseling to violent partners[2]. More specifically,

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[2]Although we attribute this role to the state, we may consider that the church or social support

we build a general equilibrium model with imperfect information. In our model, all individuals are initially married. However, they may divorce or remain married in the next period. At the same time, individuals who divorce may remain in that state or return to their former spouse[3].

According to previously introduced evidence, we consider that agents are heterogeneous with regards to their innate aggressiveness level and that they decide in order to maximize their utility, their consumption level and the quantity of their leisure time dedicated to family and friends. Marriage and the emotional profile of partners are seen as experience goods.

Leisure time with friends in our model is characterized by alcohol intake time. As in Card and Dahl (2011) there is a direct relation between alcohol intake and agents' aggressive behavior. In other words, we consider that each agent has a high innate level of aggression and that alcohol abuse amplifies this personal aggressiveness. In this way, the more intense the leisure time with friends, the higher the alcohol intake and the likelihood that conflicts may emerge between the couple, which may end up in family violence[4]. We also demonstrate that there is a level of aggression induced by alcohol intake that leads the violence victim to desire divorce.

It is worth highlighting that in our model, alcohol intake stimulates violence in the family environment in a heterogeneous, non-trivial way. Besides individual aggression, we consider that agents are heterogeneous with regards to a self-control parameter, which creates barriers to excessive alcohol intake in leisure moments shared with friends. Therefore, it is only after revealing their partners' type that agents decide to break up.

We show that costs associated to the divorce transition and permanence play a major role, perpetuating marriages and violence within the family. More specifically, we assess the impact of the social stigma for separated individuals in the divorce rate and domestic violence.

In our model, couples who divorce may decide to return to live together with their partners. This happens as the violent partner adopts a less aggressive behavior. We also show that there is a reservation value that grants the return of previously divorced couples to live together again. The lower the compensation offered by the violent partner in the case of reappearance of domestic violence, the lower the

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institutions might play this role. We'll introduce further details later on.

[3]Observe that we are not interested in building a model that explains marriage and divorce. For marriage models, please refer to Weiss (1997) and Cornelius (2003) among many others in literature.

[4]Like Averett and Wang (2014), we assume that alcohol intake creates a false sense of courage and a reduction in moral and ethical aspects, which may lead to a growth in individual aggression that ends up in domestic violence.

probability for the separated couple to return to cohabitate.

We show that psychosocial follow-up policies for aggressive partners and female empowerment generate negative impacts in violence incidence within the family. The first policy leads to a reduction in the frequency and intensity of violent acts provoked by aggressive partners. It generates impacts on the intensive margin of violence in the family. The second policy affects the number of couples who decide to return to cohabitate with their partners. Observe that contrary to the previous policy, female empowerment generates impacts on the extensive margin of domestic violence.

This article is related to the growing literature on the issue of domestic violence as a divorce-inducing mechanism (Pollak (2004), Bowlus and Seitz (2006), Farmer and Tiefenhaler (1996) and Tauchen and Witte (1995)). As in Pollak (2004) we propose a scenario where the probability of domestic violence depends on individual traits. However, we consider individual aggression and alcohol intake as violence inducers, instead of taking into account their growth in a violent household. We also evaluate the impact of female empowerment in the reduction of domestic violence. We find out that more female empowerment (a reduction in the costs of remaining divorced) makes it easier for a woman victim of aggression the definitive break up of her violent marriage.

This work also differs from Pollak (2004) in other aspect. We model divorce as a rational decision instead of as a probabilistic scenario. In our model, all agents have a high innate level of individual aggressiveness that may be reduced with psychosocial follow-up promoted by the state. Divorce emerges when alcohol intake triggers a level of aggression that becomes intolerable for the partner victim of violence.

Like Farmer and Tiefenhaler (1996) we also study the impacts of a social support policy in the dynamics of the victim return to the previously broken marriage. In their study, the temporary victim exit acts as a mechanism that signals the dissatisfaction of the abused woman, while in our model the exit occurs a priori in a rational and definitive way. The return home occurs through a combination of the promise of violence reduction by the violent partner and the costs related to remaining divorced.

Our work is also linked to the literature that approaches female empowerment as a mechanism for social and financial development (Duflo (2012), Bobonis et al. (2013) and Doepke and Tertilt (2018)). We show that an increase in female empo-werment and more specifically, a reduction in the social stigma related to a divorced person are presented as effective policies to reduce domestic violence. However, contrary to these studies, we not only model the extensive margin of violence. In

our model, the state plays a key role in reducing the intensive margin of violence.

We believe that the remarkable innovation of the present work is based on the combination of elements that explain divorce, remarriage and the incidence of violence within the family in both their intensive and extensive margins. In our model, agents are rational and maximize their utility in the three possible states. The process of returning home after a divorce period only happens if the violent partner behavior change is such that the utility of remarriage is higher than staying divorced.

Besides this short introduction, this article includes four more sections. In the next one we shall introduce a brief bibliographic reference on domestic violence. The methodology to be adopted is introduced in the following section. The next one relates couples heterogeneity to the aggregate incidence of domestic violence, where impacts of female empowerment and psychosocial follow-up of married individuals are assessed, as well as their effects on remarried agents. The last section draws the final conclusions.

2 Domestic Violence

Fighting domestic violence is probably one of the most controversial matters in social and economics literature. Everyone gets scared with the evidence that one in three women worldwide have been victims of some kind of abuse throughout their lives. Even more surprising is the fact that these incidents are generally provoked not just by unknown agents in unexpected moments. Most often, they happen at home and the main aggressors are their partners.

It is also a fact that domestic violence is for the most part committed by males and it happens in different forms and levels. According to the Ending Violence Against Women Report (1999) physical aggression, sexual or psychological violence, financial abuse and restrictions to freedom and movement are common examples of acts mentioned by women who have been victims of some type of violence provoked by their partners. It is also not uncommon to hear stories of aggressions against their partners committed by men who have been married for years. Beating, kicking, forced sex and different intimidation forms such as death threat for example, are frequent acts of domestic violence (Stevensson and Wolfers (2007) and Anderberg and Rainer (2013)).

The incidence of gender family violence is not limited to poor regions or families with low social and education levels. It is a global phenomenon that affects countries regardless of their religion, political position, financial situation or social and cultural origins. According to data from more than fifty studies carried out in several different

countries compiled by the Center for Health and Gender Equality, between 10 and 50% of all married women already suffered some type of physical violence from their partners. Out of this percentage, we must remark that more than 70% already suffered violent acts that even required urgent medical care and hospitalization[5].

Why is it then that an abused woman does not simply leave her aggressive partner instead of continuing to live in a hostile environment for long periods of time? The empirical reasons found are fear of partner retaliation, financial dependency, lack of support from family or friends, concern with children or even an emotional connection with the violent partner, which rules divorce out as the natural strategy to be followed.

According to the psychological theory that predominated before the 70's, emotional dependency and masochist behavior in some women were considered as the main factors for the continuity of affective relations characterized by abusive and violent behavior. However, this theory has lost space in the early 80's, being replaced by explanations focused on the relation between personal attitudes and external factors such as the environment in which a person is inserted. (Ali et al. (2016)).

According to Saunders (2003) the reasons for a spouse failure to leave a violent home may be related to her coexistence with violent parents during childhood. The author advocates that some individuals tend to accept violent and abusive partner behavior in a more passive way, as they consider it natural. For Button (2008) hearing stories of domestic violence from neighbors may contribute to this passive attitude.

Another argument related to the female external environment consists of the fact that they coexist with a lack of public and private support to their decision to leave a violent home. According to this theory, it is expectable that women who were unprotected during prior violent acts committed by their partners and denounced to the relevant authorities tend to silently accept new aggressions. Also in agreement with studies developed by the psychological theory, Truman-Schram et al. (2000) and Strube and Barbour (1984) believe that the stronger the feeling of love and faithfulness of a woman for her partner, or even the higher the level of her religious beliefs and values, the most likely she will be to become highly submissive.

In sum, fighting domestic violence is not an easy task. Some societies consider violence against women simply as a socially justifiable act (Pollak (2004)). Arguments such as that the spouse did not obey her husband; she addressed her partner in a

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[5]Bowlus and Seitz (2006) verified that a large number of couples where violence predominates end up in divorce and that violent and non-violent relationships have different traits: violent couples have on average a lower education level and come from families with a story of family abuse. See also Kruse et al. (2011) and Hidropo and Fernald (2013).

disrespectful way; the meal was not ready in the normal time; the spouse questioned her husband on her night out with friends or even with girlfriends and lovers and rejected sex are, in some societies, all justifiable arguments for a man to physically and verbally abuse a woman.

To make matters worse, we should highlight that when there are indeed complaints against their partners, many are related to the recurrence of violent acts. In many cases, women denounce their violent partners to public authorities. However, what it is verified some months after the initial police report is a relapse of the aggression process. According to Saunders (2003), violent acts committed by affective partners don't stop with divorce or physical separation. In most cases, aggressions increase both in intensity and frequency after formal couple separation is materialized.

More specifically linked to this study, there are two predominant arguments on domestic violence and emotional behavior of agents in literature. On the one hand, we have the thesis that domestic violence appears as a male domination mechanism to control their partners and sons. In his scenario, violence arises when for example the aggressor has a very low external option. On the other hand, there is the theory that violence appears as a non-voluntary phenomenon related to frustration and lack of self control capacity.

Card and Dahl (2011) developed a study on the impacts of the defeat of the favorite football team in family violence, verifying a 10% growth in family violence police reports. According to the authors, when crossing data from police stations after 750 games played by six big NFL teams throughout 12 years, home violence often started with the unexpected defeat of the favorite team, once in games where defeat was expected, no significant variations in family violence reports were found.

Like Card and Dahl (2011) have suggested, violence appears as an unintentional mechanism typical of each personal profile. In our case, instead of the defeat of a favorite football team, we consider alcohol intake as a mechanism that triggers violent behavior. We also analyze the personal self-control aspect. Therefore, in our model, violence arises as a combination of these two opposite effects.

In a different approach, Eswaran and Malhotra (2011), defend the existence of two theories that relate family violence with the sexual behavior of affective partners. The first one, denominated feminist theory, suggests that men use all their possible tricks - violence included - to contain and dominate their female partners' behavior. The second, known as the evolutionary theory, advocates that men tend to control their partners' behavior in order to reduce uncertainties on their children's

paternity[6].

Other studies, such as that of Aizer (2010) and Anderberg et al. (2017) seek to understand the relation between domestic violence and each partner's bargaining power within marriage. According to these studies, an increase in female wages tend to improve both the individual external option as well as their bargaining power within marriage, thus leading to a reduction in the probability of violent acts. Also, according to Aizer (2010) the reduction in the salary gap between men and women in recent years has played a key role in the female bargaining power improvement, reducing in nearly 9% the female family violence rate in the US between 1990 and 2003 (Farmer and Tiefenhaler (1997) and Fernández and Wong (2014)).

Still remarkable are the studies developed by Jovanovic (1979) and Felli and Harris (1996) who seek to model violence and divorce as a learning mechanism. According to this theory, the quality of a relationship is not perfectly observable by agents. This way, it is only through time that agents discover the real traits of their partners and decide to divorce (Eswaran and Malhotra (2011) and Cornelius (2003)).

Policies. Among the policies that seek to inhibit the appearance and continuity of family violence acts we must remark aggressor's imprisonment. However, although this measure may justify by itself the effectiveness of this type of intervention, its empirical results in the medium term are inconclusive. According to Yvengar (2009) based on data from the Federal Bureau, there is strong evidence that aggressive spouses tend to take revenge from their partners when leaving prison. The author found indications of an increase in the homicide rate related to previously reported ex-partners.

Tauchen and Witte (1995) developed an experiment in partnership with the Minneapolis Police Department and the Department of Justice of the United States, where police officers participating in the project could perform three possible actions when notified of a domestic violence case. It was randomly decided that police actions adopted would be: immediate aggressor detention, couple temporary separation and couple counseling. According to the authors, immediate aggressor arrest was the most effective domestic violence combat policy. They also observed that deflagrating domestic aggression increases the probability of further violent acts in a short period of time, as suggested by Yvengar[7]. According to the authors, immediate

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[6]An empirical study developed in India verified the existence of strong indications that support the evolutionary theory. In other words, violence appears as a male retaliation to a more sociable female behavior.

[7]Tauchen and Witte (1995) corroborated that family violence is a low persistency process. They verified that after six months of reporting an incident to the police, the probability of domestic aggression recurrence was only around 1%.

aggressor arrest seems the most effective measure to control domestic violence.

Aizer and Bó (2009) advocate that it is necessary to consider the problem of domestic violence within a scenario where female preferences change through time. They suggest that soon after a violent act takes place, there is a strong victim desire to report her aggressor to the Police. However, as time goes by, there is a process of revaluation of the affective relationship. This way, the previously rejected relation starts to be desired, thus increasing the probability of the abused woman to continue to cohabitate with his aggressive partner again.

Through a policy that forbids withdrawing accusations against aggressive partners, the authors corroborated a growth of nearly 14% in domestic violence reports and a 24% increase in the number of arrests. These results are an indication that policies design to fight dynamic inconsistencies in human behavior can be effective[8].

In a study that assesses the profile of women who were victims of family aggression, and of those who returned to live with their partners, Gelles (1976) verified that women who are abused less frequently tend to request police intervention. However, those women who suffer this problem in a more constant basis tend to permanently divorce from their partners.

Farmer and Tiefenhaler (1996), seeking to understand the reasons for the high rate of female victims coming back to their aggressive partners' homes, verified that shelters and public and private institutions that support abused women serve as a mechanism to explain spouse personality traits. In this way, it is possible to obtain a reduction in the incidence of family aggressions against women who seek the help of support institutions, due to the belief that new acts of violence shall be again followed by a report and the consequent home abandonment.

Female empowerment has also been defended as an efficient mechanism to improve female wellbeing. As empowerment implies a wider outside option for women, it is expectable to reduce violence incidence in the family and obtain a higher equilibrium in intra-family decisions, thus generating positive impacts in the social and economic wellbeing of families (Basu (2006), de la Croix and Donckt (2010) and Duflo (2012)).

Alcohol Abuse. There is vast literature advocating the existence of a positive correlation between alcohol intake and individual aggressiveness[9]. There are two

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[8]In a similar study, Stevensson and Wolfers (2006) observed a reduction of nearly 30% in the number of domestic abuse reports and of 10% in the amount of murders committed against women.

[9]According to Roizen (2007) there is evidence that among all violent acts committed against women, in nearly 45% of cases, the male partner was under alcohol influence. See also Johnson (2011), Grahan et al. (2011) and Averett and Wang (2014) for more on the empirical relation between alcohol intake and domestic violence.

basic arguments behind this relation: the first one suggests that a combination of alcohol intake and conflicts in the family environment would be the main reason for the violence incidence and dimension. The second one points at the impact of alcohol on individual rationality and on the real evaluation of facts by a person under alcohol effects.

According to Zimmerman (2004), from a psycho-pharmacological perspective, high alcohol intake leads individuals to lose perspective on the correct and the fair, increasing the chances of running risks or making decisions otherwise unthinkable (Markowitz and Grossman (1998), Markowitz (2005) and Markowitz et al. (2014)). In other words, excessive alcohol consumption leads agents to make blind decisions that are less correct, wrongly evaluating all their consequences and the returns obtained by their attitudes[10].

Zimmerman sustains that drinking may increase individual vulnerability levels. According to the author, this may happen even if an individual has not been involved in any wrongdoing. The simple fact of being in a more vulnerable situation, with a lower probability of self-defense or of accurately recognizing an illegal act or the exact way in which something happened may make the drunk individual more prone to be accused, even unfairly[11].

Table 2, built as from Caetano et al. (2000), introduces the relation between alcohol intake intensity and violence incidence in the family environment for both genders. Observe that except for the low-frequency male consumer, there is a positive relation between monthly alcohol intake and the frequency of family incidents. Note that the difference in terms of violent acts committed between those who drink five or more drinks per week (frequent drinkers) and those who drink from one to three times a month (less frequent drinkers) can reach around 10% for males. In 26% of cases of domestic violence against males the woman was a frequent drinker.

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[10]Card and Dahl (2011) suggest the existence of a similar mechanism to the one proposed by Zimmerman, who relates alcohol intake with personal disappointment and domestic violence. According to the authors, domestic violence may appear as a result of a combination between disillusion and alcohol consumption.

[11]According to Marcus and Siedler (2015) excessive alcohol consumption is related to different negative consequences on individuals, such as a higher probability of committing crimes and violent acts, a bigger chance of committing suicide or adopting sexually risky behavior, a lower employability rate and a worse school performance.

	Male to Female IPV (%)	Female to Male IPV(%)
Alcohol Consumption		
Abstainer	12,0	15,0
Infrequent Drinker	7,5	21,0
Less Frequent Drinker	14,0	21,0
Frequent Drinker	23,0	26,0
Average	**9,8**	**16,7**

Table 2: Alcohol Consumption and Intimate Partner Violence(IPV)
Source: National Alcohol Survey, 1995.
Note: **Abstainer** - Drinks less than once a year or has never drunk. **Infrequent Drinker** -
Drinks less than once a month but at least once a year. **Less Frequent Drinker** - Drinks one to
three times a month. **Frequent Drinker** - Drinks at least once a week.

3   The Model

The basic model is composed of a finite population of male and female individuals.
All agents may be in three possible stages: married, divorced or remarried. Time is
continuous and each individual has only a single time unit, which may be allocated
between work and leisure. Let w represents the wage rate per unit of time worked
and consider that the remaining time of each agent is dedicated to family (L^F) and
friends (L^A).

There are two consumer goods being produced in an exogenous way on each time
elapsed: final consumption good (c) and alcoholic drink (a). Let's suppose that the
prices of these goods are normalized by the unit and that alcohol is only consumed
in leisure moments with friends.

Each agent has a fixed number of friends N and an individual self-control parame-
ter σ. Suppose that this self-control term is related to the strength each individual
has to set limits to alcohol drinking in leisure moments with friends.

Consider that marriage is an experience good and that all agents are initially
married. In this way, all aspects related to the quality of marriage are only revealed
through time. This hypothesis implies that married individuals may divorce as their
partners' traits are perfectly revealed. Therefore we have that[12]:

$$\max_{c_{ij},a_{ij},L^F_{ij},L^A_{ij}} (c_{ij})^\eta (a_{ij})^\theta [(L^A_{ij})^\gamma + (L^F_{ij})^\gamma]^{\frac{1-\eta-\theta}{\gamma}} \tag{1}$$

subject to

$$w(1 - L^F_{ij} - L^A_{ij}) \geq c_{ij} + a_{ij}, \tag{2}$$

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[12]Divorced woman are indexed by the term i and men by the term j. Consider ij as the term
that relates a type i woman married to a j type man. Likewise, ji relates a j type man married
to a type i woman.

$$a_{ij} = \phi N_i L^A_{ij} - \sigma_i, \tag{3}$$

describes the problem of a woman of type i in a marriage with a man type j on each moment of time t.

In turn, the problem of a divorced woman of type i is given by[13]:

$$\max_{c_i, a_i, L^A_i} (c_i)^\eta (a_i)^\theta (L^A_i)^{1-\eta-\theta} \tag{4}$$

subject to

$$w(1 - L^A_i) \geq c_i + a_i, \tag{5}$$

$$a_i = \phi N_i L^A_i - \sigma_i, \tag{6}$$

where $0 < \phi < 0$.

These previous expressions deserve some comments. The expression (1) describes the utility of a type i woman in a marriage with a type j man. The terms c_{ij} and a_{ij} represent the final good and the alcoholic consumption good respectively. Equation (2), represents the budget constraints of a woman who devotes $(1 - L^F_{ij} - L^A_{ij})$ of her time to work.

The expression (3) is related to individual alcohol intake during leisure time with friends. Notice that alcohol consumption grows according to the number of friends that participate in the night out, ϕN_i, and decreases with individual self-control, σ_i. In this way, the more time dedicated to leisure with friends, L^A_{ij}, the more the alcohol intake for a type i woman married to j.

The problem of a divorced woman, as defined by expressions (4) - (6) has a similar interpretation. The only difference is that a divorced woman only spends her time working or in leisure moments with friends.

The utility maximization produces equilibrium expressions for a type i woman married to j[14]:

$$c^*_{ij} = \eta w (1 + \xi) \left\{ \frac{(\phi N_i - \sigma_i)(1 - \frac{\xi}{w})^{\frac{1}{\gamma-1}} - \sigma_i}{\theta w + \{\theta w + [\theta + \eta(1 + \xi)]\phi N_i\} (1 - \frac{\xi}{w})^{\frac{1}{\gamma-1}}} \right\}; \tag{7}$$

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[13]The problems of a divorced and a married type j man are determined in the same way as those of a type i woman. Observe that as all agents are initially married, there is the possibility of staying married or divorcing in the following period for each agent. We also consider the possibility of returning to the former partner (remarriage).

[14]The term ξ represents the ratio between the Lagrange multipliers associated to the alcohol intake restriction (expression (3)) and the individual budget constraint (expression (2)). This equals the shadow cost of alcohol consumption in terms of the final consumption good.

$$a_{ij}^* = \theta w \left\{ \frac{(\phi N_i - \sigma_i)(1 - \frac{\xi}{w})^{\frac{1}{\gamma - 1}} - \sigma_i}{\theta w + \{\theta w + [\theta + \eta(1 + \xi)]\phi N_i\}\left(1 - \frac{\xi}{w}\right)^{\frac{1}{\gamma - 1}}} \right\}; \tag{8}$$

$$L_{ij}^{A*} = \frac{\{\theta w + [\theta + \eta(1 + \xi)]\sigma_i\}\left(1 - \frac{\xi}{w}\right)^{\frac{1}{\gamma - 1}}}{\theta w + \{\theta w + [\theta + \eta(1 + \xi)]\phi N_i\}\left(1 - \frac{\xi}{w}\right)^{\frac{1}{\gamma - 1}}}; \tag{9}$$

$$L_{ij}^{F*} = \frac{\theta w + [\theta + \eta(1 + \xi)]\sigma_i}{\theta w + \{\theta w + [\theta + \eta(1 + \xi)]\phi N_i\}\left(1 - \frac{\xi}{w}\right)^{\frac{1}{\gamma - 1}}}. \tag{10}$$

Observe from these expressions that the solution $L_{ij}^{F*} = 0$ will never be optimal. Therefore, individuals will always dedicate a positive part of their available time to work and to leisure with friends and family. We may even deduce from expressions (9) and (10) that as:

$$\frac{L_{ij}^{A*}}{L_{ij}^{F*}} = \left(1 - \frac{\xi}{w}\right)^{\frac{1}{\gamma - 1}}$$

we have that whenever $0 < 1 - \frac{\xi}{w} < 0$ a type i woman always spends more time with friends that with his partner. In other words, whenever the relative price of leisure is higher than the shadow cost of alcohol consumption in terms of total consumption, a woman will prefer to spend more time with friends than with her partner.

The indirect utility function of a woman i in a marriage with j is given by:

$$v_{ij}(w, \sigma_i, \phi N_i) = U_{ij}(c_{ij}^*, a_{ij}^*, L_{ij}^{A*}, L_{ij}^{F*}). \tag{11}$$

By using the Envelope Theorem, it can be shown that:

$$\frac{\partial v_{ij}}{\partial w} > 0;$$

$$\frac{\partial v_{ij}}{\partial \phi N_i} > 0;$$

$$\frac{\partial v_{ij}}{\partial \sigma_i} < 0.$$

Therefore, if the income of an individual or the mass of friends who decide to go out together for leisure grows, the utility of woman i will also increase. At the same time, self-control exerts a negative effect on its indirect utility[15].

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[15]The problem of utility maximization for a divorced woman is similar to the problem for a married woman. The only difference is that when remarrying, the woman does not optimally decide on her alcohol intake. This is imposed by her partner. We shall discuss this issue further later on.

The solution to the utility maximization problem for a divorced type i woman is given by:

$$c_i^* = \frac{w[(1 - \eta - \theta)(1 + \vartheta)(\phi N_i - \sigma_i) - \theta(w - \phi N_i \vartheta)]}{\phi N_i(1 - \eta - \theta)(1 + \vartheta) - \theta(w - \phi N_i \vartheta)}; \tag{12}$$

$$a_i^* = \frac{\theta(w - \phi N_i \vartheta)\sigma_i}{\phi N_i(1 - \eta - \theta)(1 + \vartheta) - \theta(w - \phi N_i \vartheta)}; \tag{13}$$

$$L_i^{A*} = \frac{(1 - \eta - \theta)(1 + \vartheta)\sigma_i}{\phi N_i(1 - \eta - \theta)(1 + \vartheta) - \theta(w - \phi N_i \vartheta)}; \tag{14}$$

where the term ϑ represents the ratio between the Lagrange multipliers associated to the alcohol intake restriction and the individual budget constraint of a divorced agent.

As we can see, when comparing expressions $(7) - (10)$ and $(12) - (14)$, whenever $\vartheta \geq \xi$, we have that $L_{ij}^{A*} < L_i^{A*}$. That is, whenever the relative shadow price of a night out for a divorced woman is higher or equal to her married state, divorce comes associated to an increase in leisure hours with friends and a reduction in the hours devoted to working[16].

In the same way, the indirect utility function of a divorced woman i is given by:

$$v_i(w, \sigma_i, \phi N_i) = U_i(c_i^*, a_i^*, L_i^{A*}). \tag{15}$$

3.1 Divorce and Remarriage Dynamics

All individuals are heterogeneous with regards to their individual aggressiveness $\bar{p}$. Let $\bar{p}_i$ be the aggression level of a type i woman and consider that $\bar{p}_i$ is distributed according to $G(\bar{p}_i)$.

There is a positive probability of a woman of type i to become violent, $p_i(a_i)$. Assume that this probability increases with alcohol consumption a_i. Consider also that $q_i(a_i)$, where $q_i(a_i) \leq p_i(a_i)$ represents the probability of this woman becoming aggressive against her affective partner in the case she has gone through the psychosocial follow-up process[17].

Therefore, we have that:

$$p_i(a_i) = P[Abuse/No\ Policy, a_i];$$

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[16]This result may be used to explain the ambiguity in the relation between divorce and labor supply. See Johnson and Skinner (1986), Mueller (2005) and Bargain et al. (2012) among others for more on this.

[17]Likewise, we have that $p_j(a_j)$ and $q_j(a_j)$ represent the probabilities for a man of type j.

$$q_i(a_i) = P[Abuse/Policy, a_i];$$

where we assume that:

    a. $p_i(a_i)$ is a two-time differentiable function such that $p_i'(a_i) > 0$ and $p''(a_i) > 0$;

    b. $p_i(0) = \bar{p}_i \in (0, 1)$;

    c. For any alcohol intake $a_i \geq 0$, $q_i(a_i) = p_i(a_i) - \bar{p}_i$[18].

Assume, without loss of generality, that the decision to leave home is always made by the woman. In other words, assume that $p_i(a) < p_j(a)$, for all a[19].

The Victim Problem. Consider V_{ij} as the value function for a type i woman in a marriage with a type j individual. At the same time, let V_i and $\hat{V}_{ij}$ represent the value function for the i type divorced and remarried woman. Then, we have that:

$$rV_{ij} = v_{ij} - p_j(a_{ji}^*)\Gamma_i + p_i(a_{ij}^*)\Lambda_i + Max\{V_{ij}, V_i - d_V\} + \dot{V}_{ij}; \qquad (16)$$

$$rV_i = v_i - s_V + Max\{V_i, V_{ij}, \hat{V}_{ij}\} + \dot{V}_i; \qquad (17)$$

$$r\hat{V}_{ij} = \hat{v}_{ij} - q_j(\hat{a}_{ji})(\Gamma_i - \varepsilon_i^d) - q_i(\hat{a}_{ij})(\varepsilon_i^s - \Lambda_i) + Max\{V_i, V_{ij}, \hat{V}_{ij}\} + \dot{\hat{V}}_{ij}. \qquad (18)$$

Notice from expression (16) that the first term on the right hand side represents the indirect instant utility of an i type woman married to a j man considering that her optimal choices are given by $(c_{ij}^*, a_{ij}^*, L_{ij}^{A*}, L_{ij}^{F*})$. The term $p_j(a_{ji}^*)$ that follows, captures the probability for a woman to suffer an aggression from her partner, as he chooses to consume a_{ji}^* units of alcohol. In this scenario, a woman i suffers a disutility given by Γ_i.

Let's assume that there is heterogeneity with regards to the disutility generated by aggression $\Gamma_i > 0$. Let Γ_i be distributed according to $F(\Gamma_i)$. Observe that with this hypothesis, the same act of violence (a kick, for instance) may generate different disutility levels for different individuals. The higher the value of Γ_i, the more indifferent the agent i is to the aggressions committed by her partner.

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[18]Notice that with this hypothesis we assume that the probability distribution of a domestic violence act does not suffer changes except for changes in alcohol intake levels. We are still considering the existence of a minimal level of aggressiveness, $\bar{p}_i$, which is independent of the alcohol consumption and in which the psychosocial follow-up acts within our model in order to reduce this term.

[19]Note that we could assume that the agent j is the victim of violence. We opted for modeling agent i due to the evidence that women are in general the main domestic violence victims. See Strauss (1997) for more details.

The element that follows in expression (16) captures the inverse effect, that is, the probability for a woman to abuse her husband considering that she consumed a_{ij}^*. $\Lambda_i > 0$ represents the gains in terms of the utility obtained with the aggression[20]. Right after, we have the term that represents the optimal choice between remaining in the marriage option and divorcing. Notice that in this last term, there is a cost d_V, which is related to the separation process.

Expression (17) is similar to the previous one. The main difference is due to the fact that the divorced agent suffers, in each period of time, a cost related to the social stigma, s_V. Observe that in the following period, a divorced type i woman may remain in the same state or return to her former partner. This return may happen in two ways: either the woman accepts to go back to her partner in the same conditions that prevailed before she divorced or she may return after he has gone through the psychosocial follow-up process aimed at reducing his individual aggressiveness, $\hat{V}_{ij}$. The last element of (17) represents the variation of V_i through time.

The last expression represents the value function related to the return to co-existence with the aggressive partner after treatment and individual aggressiveness reduction. The second term on the right (18) represents the net cost of new evidence of family aggression in the family environment. Notice that new aggressions occur at a rate $q_j(\hat{a}_{ji}) < p_j(a_{ji}^*)$ and may imply a disutility, given that $\Gamma_i - \varepsilon_i^d$, where $\varepsilon_i^d > 0$ represents the value demanded by the wife if there is a new breach in the non-violence commitment. The term $\hat{a}_{ji}$ represents the value of a_{ji} imposed to the partner to restart a broken marriage.

The term that follows in the expression (18), is similar to the previous one, however it captures the net cost of violence committed against j, $(\varepsilon_i^s - \Lambda_i)$. Observe that $\varepsilon_i^s > 0$ represents the value offered by a woman i if she is responsible for the reappearance of the violence process within the marriage. The penultimate term of (18) is related to a woman's decision to remain in the remarriage option or not. Finally, the last term represents the variation of $\hat{V}_{ij}$ through time.

The Aggressor Problem. Let V_{ji} be the value function of a type j man in a marriage with a type i woman. At the same time, V_j and $\hat{V}_{ji}$ represent the value functions for an individual j who is divorced and remarried to his former partner,

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[20]The term Λ_i intends to capture evidence that suggests psychopathology and sadism as key factors that trigger violent acts. Please refer to Guay (2006) for more.

respectively. Then, we have that:

$$rV_{ji} = v_{ji} - p_i(a_{ij}^*)\Gamma_j + p_j(a_{ji}^*)\Lambda_j + max\{V_{ji}, V_j - d_A\} + \dot{V}_{ji}; \qquad (19)$$

$$rV_j = v_j - s_A + max\{V_j, V_{ji}, \hat{V}_{ji}\} + \dot{V}_i; \qquad (20)$$

$$r\hat{V}_{ji} = \hat{v}_{ji} - q_i(\hat{a}_{ij})(\Gamma_j - \varepsilon_j^d) - q_j(\hat{a}_{ji})(\varepsilon_j^s - \Lambda_j) + max\{V_j, V_{ji}, \hat{V}_{ji}\} + \dot{\hat{V}}_{ji}. \qquad (21)$$

Observe that expressions $(19) - (21)$ are similar to $(16) - (18)$. The difference is that now we have the three value functions for the other agent. As in the victim problem, expression (21) tells us that in the remarriage process, there is a maximum imposition level of alcohol intake for an individual. Then, the term $\hat{v}_{ji}$ represents the indirect utility of the aggressive individual in remarriage, once his/her alcohol consumption is given by $\hat{a}_{ji}$.

Assume to simplify the presentation of the main model characteristics that the victim never attacks his/her partner. This way, we have that $p_i(a_{ij}^*) = q_i(\hat{a}_{ij}) = 0$ and $\hat{v}_{ij} = v_{ij}$, once the woman never attacks her partner and he does not go through the individual aggression reduction process.

3.2   Equilibrium

Consider a particular couple ij. Given the optimal choices of consumption and time devoted to work and leisure of married and divorce couples, it is possible to show, based on expressions $(16) - (21)$, that there is a set of reservation strategies $(\hat{a}_{ji}, \hat{\varepsilon}_i^d, \hat{\varepsilon}_j^s)$ which characterize equilibrium with the divorce and remarriage options in steady state. The first element describes the divorce decision made by a woman victim of aggression committed by her partner. The terms that follow determine if the broken marriage will have a second chance or not.

In order to better describe equilibrium, consider that whenever $a_{ji}^* \geq \hat{a}_{ji}$, the optimal strategy for a woman i victim of violence is to definitely abandon her partner. In other words, whenever the optimal alcohol consumption of the aggressive partner is not lower than the maximum compatible with the indifference between the marriage and divorce options, there will be a definitive rupture of the relationship.

At the same time, observe that whenever $\varepsilon_i^d < \hat{\varepsilon}_i^d$, the remarriage process will not be advantageous for the violence victim. Even if there is a reduction in the probability of new violent incidents, $q_j(\hat{a}_{ji})$, going back to the former partner does not pay off. The return obtained with the remarriage option is lower than the one

obtained through divorce[21].

Finally, in order to materialize remarriage, it is necessary that $\varepsilon_j^s \geq \hat{\varepsilon}_j^s$, where $\hat{\varepsilon}_j^s$ is equal to the ε_j^s reservation value, which equals the divorce and remarriage options for the aggressive partner.

Definition 1 *Given the optimal choices of the aggressive individual (a_{ji}^*, c_{ji}^*, L_{ji}^{A*}, L_{ji}^{F*}), the steady state equilibrium with the divorce and remarriage possibilities is given by the vector ($\hat{a}_{ji}, \hat{\varepsilon}_i^d, \hat{\varepsilon}_j^s$) that satisfies:*

$$p_j(\hat{a}_{ji}) = \frac{v_{ij} - v_i + s_V - d_V}{\Gamma_i}; \tag{22}$$

$$\hat{\varepsilon}_i^d = \Gamma_i - \frac{v_{ij} - v_i + s_V}{q_j(\hat{a}_{ji})}; \tag{23}$$

$$\hat{\varepsilon}_j^s = \Lambda_j - \frac{\hat{v}_{ji} - v_j + s_A}{q_j(\hat{a}_{ji})}. \tag{24}$$

The previous expressions may be obtained from equations $(16) - (21)$, respectively. In order to determine the first expression, which stands for the final divorce decision, it is enough to equal equations (16) and (17). The two following expressions determine divorce with the remarriage option for both the victim and the aggressor. They may be obtained by equalizing expressions (18) and (17) and equations (20) and (21), respectively.

For the complete equilibrium description with the divorce and remarriage options, we need to define the relative positions of the triple ($a_{ji}^*, \hat{a}_{ji}, \tilde{a}_{ji}$). The first element of this group as previously mentioned, sets the optimum alcohol consumption level for a type j individual married to i. The second term defines the maximum aggressor alcohol intake compatible with the option of staying married. Finally, the variable $\tilde{a}_{ji}$ dictates the consumption level compatible with the equality between $\hat{\varepsilon}_i^d$ and $\hat{\varepsilon}_i^s$, which is given by:

$$q_j(\tilde{a}_{ji}) = \frac{(v_{ij} - v_i + s_V) - (\hat{v}_{ji} - v_j + s_A)}{\Gamma_i - \Lambda_j}. \tag{25}$$

Observe that $\tilde{a}_{ji}$ describes the set of couples that after the divorce period decide to restart the relationship. In other words, it grants that there will be a remarriage whenever the compensation demanded by the woman in case of violence resurgence

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[21]Observe that our model also explains the evidence that a higher compensation offered by the aggressor to the victim will result in a bigger chance of remarriage. See Strube and Barbour (1984), Strube (1998) and Weiss (1997) for more on this.
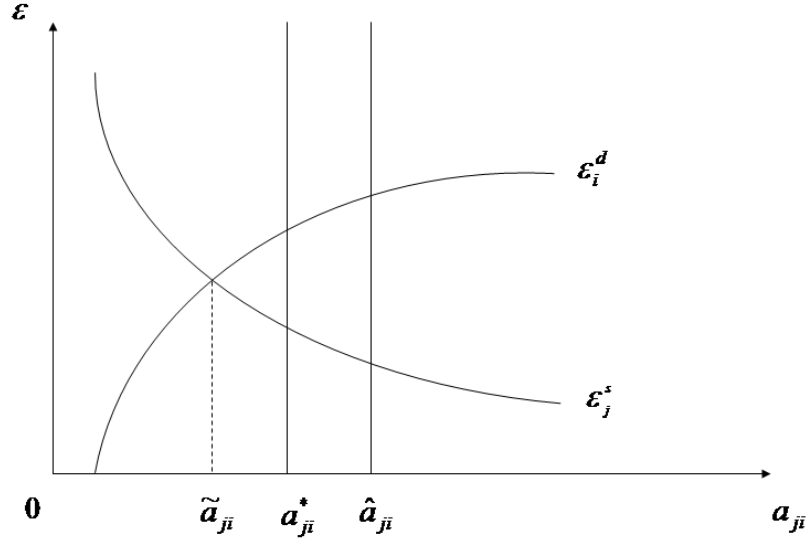
Figure 1: Equilibrium without Divorce

is lower or similar to the one offered by the aggressor. The proposition below consolidates this result.

Proposition 2 *Consider* $(a_{ji}^*, \hat{a}_{ji}, \tilde{a}_{ji})$. *Then, we have that:*

(i) If $a_{ji}^* < \hat{a}_{ji}$, *there will be no divorce;*

(ii) If $\tilde{a}_{ji} < \hat{a}_{ji} \leq a_{ji}^*$, *there will be a separation without any chances of remarriage;*

(iii) If $\hat{a}_{ji} \leq Min\{\tilde{a}_{ji}, a_{ji}^*\}$, *there will be a separation with remarriage.*

Proof. Item (i) follows directly from the definition of a_{ji}^*, which is the alcohol consumption compatible with divorce. In order to demonstrate points (ii) and (iii), define:

$$\hat{\varepsilon}_i^d = \varepsilon_i^d(a_{ji});$$

$$\hat{\varepsilon}_i^s = \varepsilon_i^s(a_{ji}).$$

The observation is immediate by considering (23) and (24), as $\varepsilon_i^d(a_{ji})$ and $\varepsilon_i^s(a_{ji})$ are increasing and decreasing functions, respectively. Moreover:

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$$\lim_{a_{ji}\to 0} \varepsilon_i^d(a_{ji}) = -\infty;$$

$$\lim_{a_{ji}\to 0} \varepsilon_i^s(a_{ji}) = \infty.$$

Therefore, there is some $\bar{a}_{ji} > 0$ small enough such that $\varepsilon_i^d(a_{ji}) > \varepsilon_i^s(a_{ji})$, for every $a_{ji} < \bar{a}_{ji}$.

∎

Figures 1 - 3 introduce three equilibrium possibilities for different values of ε and a_{ji}. Seeking to better understand equilibrium characterization, we shall first focus on figure 1, which introduces the model equilibrium without the possibility of divorce. Observe that in this case, as the alcohol consumption level compatible with divorce is above the aggressive partner's optimal consumption a_{ji}^*, there will never be a divorce.

Now consider figure 2. We may initially notice that as $a_{ji}^* > \hat{a}_{ji}$, the aggressive partner's alcohol intake is higher than the maximum level the victim can tolerate. Therefore, divorce is the best option for the aggressor's victim.

Remember that as by the definition previously introduced, $\tilde{a}_{ji}$ separates the set of couples that once divorced decide to remarry their old partners from those who never return to the previously broken marriage. For alcohol intake levels above $\tilde{a}_{ji}$, the minimum demands by the abused partner for returning to the marriage state are not compatible with what the aggressor is willing to concede. Consequently, we can conclude from this example that as $\tilde{a}_{ji} < a_{ji}$ there will be no remarriage chances once the victim has chosen to separate.

Finally, let's consider figure 3. Observe that in this case, individual j assumes a non-aggression posture that makes the new $\hat{a}_{ji}$ value to be lower than $\tilde{a}_{ji}$, the value that is compatible with remarriage.

It is worth highlighting that in this three examples, a reduction in the victim cost of staying divorced s_V, leads to a movement of the curve ε_i^d, to the left, which implies a reduction in the reservation value $\tilde{a}_{ji}$ according to (25). In turn, through the equilibrium expression (22), we have that a fall in s_V is followed by a reduction in $\hat{a}_{ji}$. Hence, a female empowerment policy focused on the reduction of the negative social stigma associated to the divorced female implies an increase in the separation probability and a reduction in the possibility of a future return to her aggressive partner.

Once optimal individual decisions are characterized, in the next section we shall study the aggregated behavior of couples. Observe that couples may have a defined
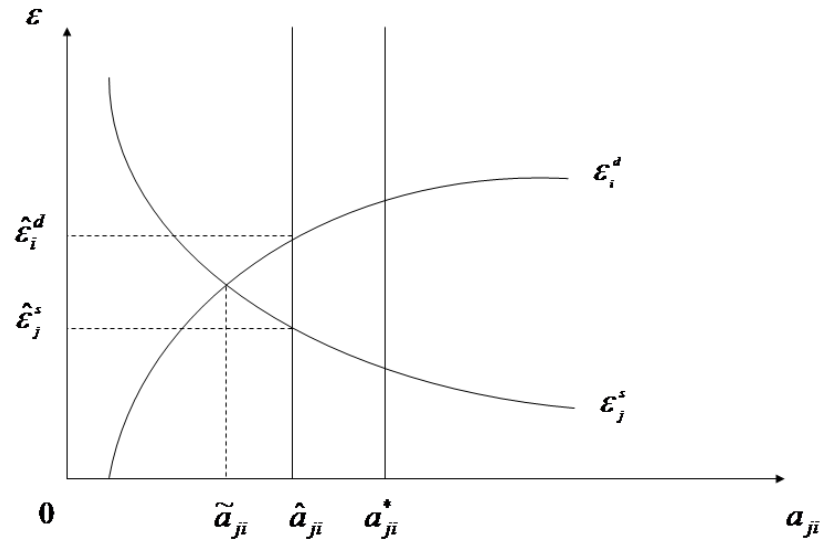
Figure 2: Equilibrium with Divorce and No Remarriage
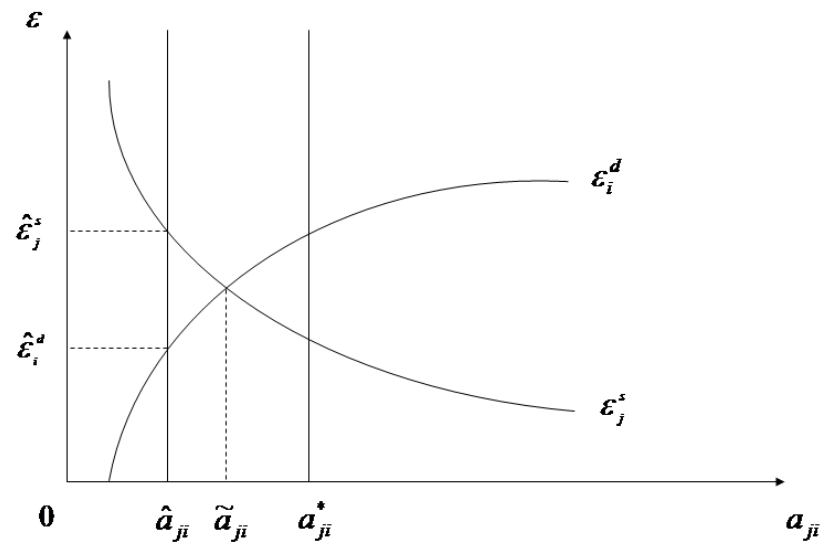
Figure 3: Equilibrium with Divorce and Remarriage

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profile, for example, as in any of the three aforementioned examples. In this way, we are particularly interested in qualifying the aggregate behavior of all couples in our economy and in evaluating the impacts of the agents' emotional profiles in keeping their relationship. We are also interested in analyzing the impact of female empowerment through a reduction of the cost of remaining divorced, s_v.

4 Aggregation and the Extension of Domestic Violence

In the previous section we considered that individuals are heterogeneous with regards to the pair $(\Gamma_i, \bar{p}_j)$, which determines the respective disutility suffered by a type i woman of an aggression committed by her partner and the intrinsic level of aggressiveness of a type j man, respectively.

Now consider that violence distribution, $F(\Gamma_i)$, is assumed to be absolutely continuous in $[\nu_l, \nu_h]$, with $0 < \nu_l < \nu_h < \infty$. Assume that $G(\bar{p}_j)$ is absolutely continuous in $(0, 1)$ and that $\bar{p}_j$ and Γ_i are independent random variables.

Note that based on the prior hypothesis, a given violent act may generate different disutility levels. A woman with a high Γ, for instance, is less tolerant to the same violence act than another one with a low Γ. In this way, it is expectable to see a stronger incidence of violent acts (and with more severe consequences) in couples formed by women with a low Γ (more tolerant to violent acts) and men with a high $\bar{p}$ (more aggressive).

Let's assume that individuals are randomly married in pairs ij. We saw in the previous section that:

$$p_j(\hat{a}_{ji}) = \frac{v_{ij} - v_i + s_V - d_V}{\Gamma_i};$$

$$q_j(\tilde{a}_{ji}) = \frac{(v_{ij} - v_i + s_V) - (\hat{v}_{ji} - v_j + s_A)}{\Gamma_i - \Lambda_j};$$

respectively describe the decision to become divorced and the remarriage option. Observe that as $p_j(\hat{a}_{ji})$ and $q_j(\tilde{a}_{ji})$ are between 0 and 1, by definition we have that:

$$v_{ij} - v_i + s_V - d_V < \Gamma_i;$$

$$(v_{ij} - v_i + s_V) - (\hat{v}_{ji} - v_j + s_A) < \Gamma_i - \Lambda_j.$$

Let us assume from this last condition that $(v_{ij} - v_i + s_V) - (\hat{v}_{ji} - v_j + s_A) < \nu_l - \Lambda_j$. In other words, consider that Γ_i takes its lowest possible value from the interval

$[\nu_l, \nu_h]$. Hence, we may affirm that:

$$v_{ij} - v_i + s_V - d_V < (v_{ij} - v_i + s_V) - (\hat{v}_{ji} - v_j + s_A) < \nu_l - \Lambda_j < \nu_l.$$

This prior hypothesis deserves some comments. Observe that the first left hand term represents the difference between net instant utilities for the woman victim of violence between the married and divorced states. The term that follows in inequality captures the difference of the same previous states between the woman's options and the man who underwent personal aggressiveness reduction options.

The last terms represent violence disutility against the woman who is most indifferent to violence in our economy and the utility gains obtained by the aggressive husband. Notice that the previous hypothesis grants that the difference between the abused woman's disutility and the aggressive husband's utility is bigger than the gains obtained by going back to a previously broking marriage. Also observe that this happens even with the most violence-tolerant woman in our model, ν_l. We shall call this hypothesis the Masochistic Behavior.

The result that follows qualifies the mass of individuals in the three possible states: married, divorced and remarried.

Lemma 3 *Consider the fulfillment of the Masochistic Behavior Hypothesis and the following parametrization of the divorce probability, $p_j(\hat{a}_{ji}) = (\frac{\bar{p}_j + a_{ji}^*}{1 + a_{ji}^*})$. The set of married, divorced and remarried couples are, respectively, given by:*

$$\text{(i) } \mathcal{S}_m = \int_{\nu_l}^{\frac{(v_{ij} - v_i + s_V - d_V)(1 + a_{ji}^*)}{a_{ji}^*}} f(\Gamma_i) G\left(\frac{(v_{ij} - v_i + s_V - d_V)(1 + a_{ji}^*)}{\Gamma_i} - a_{ji}^*\right) d\Gamma_i,$$

$$\text{(ii) } \mathcal{S}_d = 0,$$

$$\text{(iii) } \mathcal{S}_r = 1 - \mathcal{S}_m.$$

Proof.

The mass of married individuals is given by:

$$\mathcal{S}_m = P[a_{ji}^* < \hat{a}_{ji}] = P[p(a_{ji}^*) < p(\hat{a}_{ji})].$$

Replacing expression (22) and the parameterization proposed to $p_j(\hat{a}_{ji})$ we have that:

$$\mathcal{S}_m = P[\bar{p}_j < \frac{(v_{ij} - v_i + s_V - d_V)(1 + a_{ji}^*)}{\Gamma_i} - a_{ji}^*].$$

Considering the distributions of Γ_i and $\bar{p}_j$ we have:

$$\mathcal{S}_m = \int_{\nu_l}^{\nu_h} \int_{0}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i}-a_{ji}^*} f(\Gamma_i)g(\bar{p}_j)d\Gamma_i d\bar{p}_j.$$

Developing the previous expression we have:

$$\mathcal{S}_m = \int_{\nu_l}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}} \int_{0}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i}-a_{ji}^*} f(\Gamma_i)g(\bar{p}_j)d\Gamma_i d\bar{p}_j +$$

$$\int_{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}}^{\nu_h} \int_{0}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i}-a_{ji}^*} f(\Gamma_i)g(\bar{p}_j)d\Gamma_i d\bar{p}_j$$

which leads to:

$$\mathcal{S}_m = \int_{\nu_l}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}} f(\Gamma_i)G\left(\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i}-a_{ji}^*\right)d\Gamma_i +$$

$$\int_{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}}^{\nu_h} f(\Gamma_i)G\left(\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i}-a_{ji}^*\right)d\Gamma_i.$$

There are three possibilities to be analyzed:

I. $\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*} < \nu_l$;

II. $\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*} > \nu_h$;

III. $\nu_l < \frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*} \leq \nu_h$.

Cases I and II are excluded for being outside the support of Γ_i. Therefore, we have that:

$$\nu_l < \frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*} \leq \nu_h.$$

In this case, we have that the mass of married individuals is given by:

$$\mathcal{S}_m = \int_{\nu_l}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}} f(\Gamma_i)G\left(\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i} - a_{ji}^*\right) d\Gamma_i.$$

In turn, the mass of divorced individuals is given by:

$$\mathcal{S}_d = P[\tilde{a}_{ji} < \hat{a}_{ji} \leq a_{ji}^*].$$

As $\tilde{a}_{ji} < \hat{a}_{ji}$, we have that: $q(\tilde{a}_{ji}) < q(\hat{a}_{ji})$. Using expression (25) and the definition of $q(\hat{a}_{ji})$, we arrive at:

$$(v_{ij} - v_i + s_V) - (\hat{v}_{ji} - v_j + s_A) < v_{ij} - v_i + s_V - d_V$$

which contradicts the Masochistic Behavior Hypothesis. Hence, we have that:

$$\mathcal{S}_d = 0;$$

$$\mathcal{S}_r = 1 - \mathcal{S}_m.$$

∎

Observe that given the Masochistic Behavior Hypothesis, the mass of divorced men and women is null. In this way, all agents will be either married or remarried and in this case, domestic violence prevails. This happens because the only state in which violence is completely eliminated in equilibrium is the divorce state, which is zero according to the scenario analyzed in the previous lemma.

It is worth highlighting that the female empowerment policy in this case does not eliminate the incidence of violence acts in the family environment, once that:

$$\frac{d\mathcal{S}_r}{ds_V} = -\frac{d\mathcal{S}_m}{ds_V}.$$

However, as remarriage comes with a process of individual aggressiveness reduction due to the psychosocial follow-up of aggressive partners, female empowerment results in a reduction in the intensiveness of family violence.

Notice that female empowerment characterizes the mass of couples in the marriage and remarriage options. The psychosocial follow-up is the policy that defines the dimension of violent acts among remarried individuals. The more efficient this policy, the higher the average violence reduction among couples.

A consequence of the Masochistic Behavior Hypothesis used in the prior propo-

sition is that $\Lambda_j < \nu_l$. This means that the utility obtained by the husband with his violent act is lower than the disutility suffered by the woman. The following lemma represents the mass of individuals in the three possible states in the case in which $\Lambda_j > \nu_h$, that is in a scenario where the man's gain in terms of aggression is higher than the disutility suffered by the most violence-averse woman. We shall call this hypothesis, the Sadistic Behavior.

Lemma 4 *Consider the fulfillment of the Sadistic Behavior Hypothesis. The set of married, divorced and remarried couples are respectively given by:*

(i) $\mathcal{S}_m = \displaystyle\int_{\nu_l}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}} f(\Gamma_i) G\left(\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i} - a_{ji}^*\right) d\Gamma_i,$

(ii) $\mathcal{S}_d = 1 - \mathcal{S}_m,$

(iii) $\mathcal{S}_r = 0.$

Proof.

The expression that qualifies $\mathcal{S}_m$ is the same one obtained in the prior proposition. Observe that when fulfilling $\Lambda_j > \nu_h$, we have that:

$$\frac{(v_{ij} - v_i + s_V) - (\hat{v}_{ji} - v_j + s_A)}{\Gamma_i - \Lambda_j} < 0$$

for all $\Gamma_i \in [\nu_l, \nu_h]$. Hence, we have that:

$$\mathcal{S}_r = P[\hat{a}_{ji} \leq \min\{\tilde{a}_{ji}, a_{ji}^*\}] = P[\hat{a}_{ji} \leq 0] = 0.$$

Consequently,

$$\mathcal{S}_d = 1 - \mathcal{S}_m.$$

∎

The previous lemma presents the behavior of couples in which the Sadistic Behavior hypothesis is verified. In such case, the mass of individuals in the remarriage option is null. This happens basically due to the high utility gains obtained by the husband through his aggression against his partner. In this way, once opting for divorce, the woman never decides to return to the previously broken marriage.

It is important to remark that in this last case, the female empowerment policy reduces aggressiveness at home. Contrary to the previous scenario, where there was an intensive aggressiveness reduction, now there is a domestic violence reduction

in its extensive margin. This means that the psychosocial follow-up policy is completely inefficient in reducing family violence. Instead, a definitive breakup process of marriages where violence prevails is observed.

In this particular scenario, an increase in female empowerment reduces the mass of married individuals in the same proportion in which the mass of divorced couples grows, which means that:

$$\frac{d\mathcal{S}_m}{ds_V} = -\frac{d\mathcal{S}_d}{ds_V}.$$

The proposition below analyzes the scenario in which $\Lambda_j \in [\nu_l, \nu_h]$.

Proposition 5 *Assume that* $\nu_l < \left[\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}\right] < \nu_h$ *and* $\nu_l \leq \Lambda_j \leq \nu_h$. *The mass of married, divorced and remarried couples is defined by:*

$$(i)\ \mathcal{S}_m = \int_{\nu_l}^{\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{a_{ji}^*}} f(\Gamma_i)G\left(\frac{(v_{ij}-v_i+s_V-d_V)(1+a_{ji}^*)}{\Gamma_i} - a_{ji}^*\right) d\Gamma_i,$$

(ii) $\mathcal{S}_d = [1 - \mathcal{S}_m] F(\Lambda_j),$

(iii) $\mathcal{S}_r = [1 - \mathcal{S}_m] (1 - F(\Lambda_j)),$

respectivelly.

Proof.

The expression that qualifies $\mathcal{S}_m$ is the same obtained before. At the same time we have that[22]:

$$\mathcal{S}_d = P[\tilde{a}_{ji} < \hat{a}_{ji} \leq a_{ji}^* \mid \Lambda_j < \Gamma_i \leq \nu_h]P[\Gamma_i > \Lambda_j]+$$

$$P[\tilde{a}_{ji} < \hat{a}_{ji} \leq a_{ji}^* \mid \Gamma_i < \Lambda_j]P[\nu_l \leq \Gamma_i < \Lambda_j].$$

Given the fulfillment of the Masochistic Behavior Hypothesis, we have that:

$$\mathcal{S}_d = 0 + [1 - \mathcal{S}_m]P[\nu_l \leq \Gamma_i < \Lambda_j],$$

which implies that:

$$[1 - \mathcal{S}_m] F(\Lambda_j).$$

At the same time we have that:

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[22]We are applying the total probability formula. This means that for any of the events A and B in the same sampling space, we have that: $P(A) = P(A \mid B)P(B) + P(A \mid B^c)P(B^c)$.

$$S_r = P[\hat{a}_{ji} \le \min\{\tilde{a}_{ji}, a_{ji}^*\} \mid \Gamma_i > \Lambda_j] P[\Gamma_i > \Lambda_j] +$$

$$P[\hat{a}_{ji} \le \min\{\tilde{a}_{ji}, a_{ji}^*\} \mid \Gamma_i < \Lambda_j] P[\Gamma_i < \Lambda_j].$$

which implies that:

$$S_r = P[\hat{a}_{ji} \le \min\{\tilde{a}_{ji}, a_{ji}^*\} \mid \Gamma_i > \Lambda_j] P[\Gamma_i > \Lambda_j] + 0.$$

Therefore, we have that:

$$S_r = P[\hat{a}_{ji} \le a_{ji}^*] P[\Gamma_i > \Lambda_j] = [1 - S_m] [1 - F(\Lambda_j)]^{23}.$$

∎

The previous propositions characterize the mass of married, divorced and remarried couples considering that $\nu_l \le \Lambda_j \le \nu_h$, which implies that the gains obtained by the violent husband in terms of utility is within the disutility interval of the abused woman. Observe that contrary to the two previous cases, now we have positive masses of couples in the three possible states. In this way, we can see proposition 5 as a combination of the two previous lemmas, where the female empowerment effect is projected in a reduction of violence in both its extensive and extensive margins. Notice that now we have:

$$\frac{dS_m(s_v)}{ds_v} = \int_{\nu_l}^{\frac{(v_{ij} - v_i + s_V - d_V)(1 + a_{ji}^*)}{a_{ji}^*}} f(\Gamma_i) G\left(\frac{(v_{ij} - v_i + s_V - d_V)(1 + a_{ji}^*)}{\Gamma_i} - a_{ji}^*\right) \frac{(1 + a_{ji}^*)}{\Gamma_i} d\Gamma_i > 0;$$

$$\frac{dS_d(s_v)}{ds_v} = -\frac{dS_m(s_v)}{ds_v} F(\Lambda_j) < 0;$$

$$\frac{dS_r(s_v)}{ds_v} = -\frac{dS_m(s_v)}{ds_v} (1 - F(\Lambda_j)) < 0;$$

which implies that:

$$\left|\frac{dS_d(s_v)}{ds_v}\right| - \left|\frac{dS_r(s_v)}{ds_v}\right| = \frac{dS_m(s_v)}{ds_v} [2F(\Gamma_i) - 1].$$

Therefore, whenever $F(\Gamma_i) < \frac{1}{2}$, the female empowerment policy is accompanied by an increase in the mass of divorced women. Note that in this case, empowerment

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[23]Note que $S_m + S_d + S_r = S_m + [1 - S_m]F(\Lambda_j) + [1 - S_m][1 - F(\Lambda_j)] = 1$.

leads to a reduction in the mass of married individuals and a more than proportional increase in the set of divorced agents if compared to the mass of remarried ones.

In this way, the empowerment policy is efficient both in the complete destruction of the set of couples where domestic violence incidence is predominant as well as in the reduction of violence rates for couples who decide to give their previously broken marriages a second chance if they come together with a psychosocial follow-up policy. Notice that the larger the impact of female empowerment in the divorce increase rate, the higher the previous first effect, which results in a complete reduction of violence within the family. At the same time, the more efficient the psychosocial follow-up of aggressors, the lower the average violence in the set of remarried individuals.

5   Concluding remarks

The emotional behavior of partners, which oftentimes ends in reciprocal verbal and physical aggression, has emerged as one of the main factors that explain growing divorce rates. It is a fact that the combination of negative emotional shocks and excessive alcohol intake is one of the main triggers of the violence dynamics within the family.

A stylized fact that dominates domestic violence literature suggests that a large number of spouses who suffer aggressions generally return home after a period of time away, withdrawing all criminal accusations against their aggressive partners. Consequently, female support policies, through female empowerment and cost reductions in the process of leaving a violent household have been remarked by literature. Another efficient policy for family violence reduction consists of lowering the violence level of potentially aggressive partners.

The main goal of this work is to theoretically assess the impacts of a psychosocial follow-up program for violent individuals, seeking to attenuate their violent behavior and to reduce the costs of divorce due to domestic violence. We also analyzed the dynamics of divorce and remarriage. We confirm that these two policies are effective in reducing domestic violence, as the decrease is observed in both the extensive and intensive margins. The more effective is the policy, the greater the likelihood of remarriages and the reduction in the intensive margin of domestic violence. At the same time, a further reduction in the costs of staying divorced results in a higher definitive relationship breakup rate and in a decrease in the extensive violence perspective within families.

References

AIZER, A. (2010): "The Gender Wage Gap and Domestic Violence," *American Economic Review*, 100(4), 1847–1859.

AIZER, A., AND P. D. BÓ (2009): "Love, Hate and Murder: Commitment Devices in violent relationship," *Journal of Public Economics*, 93(3-4), 412–428.

ALI, P., ET AL. (2016): "A Literature Review of Intimate Partner Violence and its Classifications," *Aggression and Violent Behaviour*, 31, 16–25.

ANDERBERG, D., ET AL. (2017): "The Gender Wage Gap and Domestic Violence," *Economic Journal, Forthcoming.*

ANDERBERG, D., AND H. RAINER (2013): "Economic Abuse: A Theory of Intra-household Sabotage," *Journal of Public Economics*, 97, 282–295.

AVERETT, S., AND Y. WANG (2014): "Identifying the Causal Effect of Alcohol Abuse on the Perpetration of Intimate Partner Violence by Men Using a Natural Experiment," Working paper 7996, IZA Working Paper Series.

BARGAIN, O., ET AL. (2012): "Female Labor Supply and Divorce: New Evidence from Ireland," *European Economic Review*, (56), 1675–1691.

BARLETT, C., AND C. ANDERSON (2012): "Direct and Indirect Relations Between the Big Five Personality Traits and Aggressive and Violent Behavior," *Personality and Individual Differences*, (52), 870–75.

BASU, K. (2006): "Gender and Say: a Model of Household Behaviour with Endogenously Determined Balance of Power," *Economic Journal*, (116), 558–580.

BOBONIS, G., ET AL. (2013): "Public Transfers and Domestic Violence: The Roles of Private Information and Spousal Conflict," *American Economic Review: Economic Policy*, 5(1), 179–205.

BOWLUS, A., AND S. SEITZ (2006): "Domestic Violence, Employment and Divorce," *International Economic Review*, 47(4), 1113–1149.

BRASSIOLO, P. (2016): "Domestic Violence and Divorce Laws: When Divorce Threats Become Credible," *Journal of Labor Economics*, 34(2), 443–477.

BROWNING, M., ET AL. (2014): *Economics of the Family.* Cambridge University Press.

BUTTON, D. (2008): "Social Disadvantage and Family Violence: Neighborhood Effects on Attitudes about Intimate Partner Violence and Corporal Punishment," *American Journal of Criminal Justice*, 33, 130–147.

CAETANO, R., ET AL. (2000): "Intimate Partner Violence and Drinking Patterns among White, Black, and Hispanic Couples in the U.S.," *Journal of Substance Abuse*, 11, 123–138.

CARD, D., AND G. DAHL (2011): "Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behaviour," *Quarterly Journal of Economics*, 126(01), 103–143.

CORNELIUS, T. (2003): "A Search Model of Marriage and Divorce," *Review of Economic Dynamics*, 6, 135–155.

DE LA CROIX, D., AND M. V. DONCKT (2010): "Would Empowering Women Initiate the Demographic Transition in Least Developed Countries?," *Journal of Human Capital*, 2(4), 85–129.

DOEPKE, M., AND M. TERTILT (2018): "Women's Empowerment, the Gender Gap in Desired Fertility, and Fertility Outcomes in Developing Countries," *Forthcoming in American Economic Association: Papers and Proceedings*.

DUFLO, E. (2012): "Women Empowerment and Economic Development," *Journal of Economic Literature*, (50), 1051–1079.

ESWARAN, M., AND N. MALHOTRA (2011): "Domestic Violence and Women's Autonomy in Developing Countries: Theory and Evidence," *Canadian Journal of Economics*, 44(4), 1222–1263.

FARMER, A., AND J. TIEFENHALER (1996): "Domestic Violence: The Value of Services as Signals," *American Economic Review*, 86(2), 274–279.

——— (1997): "An Economic Analysis of Domestic Violence," *Review of Social Economic*, 55, 337–358.

FELLI, L., AND C. HARRIS (1996): "Learning, Wage Dynamics, and Firm-Specific Human Capital," *Journal of Political Economy*, 104(4), 838–868.

FERNÁNDEZ, R., AND J. C. WONG (2014): "Divorce Risk, Wages and Working Wives: A Quantitative Life-Cycle analysis of Female Labour Force Participation," *The Economic Journal*, 124(576), 319–358.

GELLES, R. (1976): "Abused Wives: Why do they Stay?," *Journal of Marriage and the Family*, 38, 659–668.

GRAHAN, K., ET AL. (2011): "Alcohol may not Cause Partner Violence but it Seems to Make it Worse: A Cross National Comparison of the Relationship Between Alcohol and Severity of Partner Violence," *Journal of Interpersonal Violence*, 26, 171–192.

GREENWOOD, J., ET AL. (2016): "Technology and the Changing Family: A Unified Model of Marriage, Divorce, Educational Attainment, and Married Female Labor-Force Participation," *American Economic Review*, 8(1), 1–41.

GUAY, R. K. . J. (2006): "The Role of Psycho pathology in Sexual Offenders Against Women," Handbook of psycopathy.

HIDROPO, M., AND L. FERNALD (2013): "Cash Transfers and Domestic Violence," *Journal of Health Economics*, 32, 304–319.

JOHNSON, H. (2011): "Contrasting Views of the Role of Alcohol in Cases of Wife Assault," *Journal of Interpersonal Violence*, 26, 54–72.

JOHNSON, W., AND J. SKINNER (1986): "Labour Supply and Marital Separation," *American Economic Review*, (76), 455–469.

JOVANOVIC, B. (1979): "Job Matching and the Theory of Turnover," *Journal of Political Economy*, 87(5), 972–990.

KRUSE, M., ET AL. (2011): "The Health Care Costs of Violence Against Women," *Journal of Interpersonal Violence*, 31(17), 3494–3508.

LUNDBERG, S., AND R. POLLAK (2013): *Cohabitation and the Uneven Retreat From Marriage in the U.S., 1950-2010.*

MARCUS, J., AND T. SIEDLER (2015): "Reducing Binge Drinking? The Effect of a Ban on Late-Night Off-Premise Alcohol Sales on Alcohol-Related Hospital Stays in Germany," *Journal of Public Economics*, (123), 55–77.

MARKOWITZ, S. (2005): "Alcohol, Drugs and Violent Crimes," *International Review of Law and Economics*, 25, 20–44.

MARKOWITZ, S., ET AL. (2014): "Alcohol Control and Foster Care," *Review of Economics of the Household*, 4(12), 598–612.

MARKOWITZ, S., AND M. GROSSMAN (1998): "Alcohol Regulation and Domestic Violence Towards Children," *Contemporary Economic Policy*, 3(16), 309–320.

MCADAMS, D., AND J. PALS (2011): "A New Big Five: Fundamental Principles for an Integrative Science of Personality," *American Psychologist*, 3(61), 204–17.

MUELLER, R. (2005): "The Effect of Marital Dissolution on the Labour Supply of Males and Females: Evidence from Canada," *The Journal of Socio-Economics*, (34), 787–809.

POLLAK, R. (2004): "An Intergenerational Model of Domestic Violence," *Journal of Population Economics*, 17, 311–329.

ROIZEN, J. (2007): "Issues in Epidemiology of Alcohol and Violence," Alcohol and interpersonal violence: Fostering multidisciplinary perspectives.

SAUNDERS, D. A. . D. (2003): "Leaving and Abusive Partner: An Empirical Review of Predictors, the Process of Leaving, and Psychological Well-Being," *Trauma, Violence Abuse*, 4(2), 163–191.

STEVENSSON, B., AND J. WOLFERS (2006): "Bargaining in the Shadow of the Law: Divorce Laws and Family Distress," *Quarterly Journal of Economics*, 121(01), 267–288.

——— (2007): "Marriage and Divorce: Changes and Their Driving Forces," *Journal of Economic Perspectives*, 21(02), 27–52.

STRAUSS, M. (1997): *Physical Assaults by Women Partners: A Major Social Problem.* Yale University Press.

STRUBE, M. (1998): "The Decision to Leave an Abusive Relationship: Empirical Evidence and Theoretical Issues," *Psychological Bulletin*, 104(2), 236–250.

STRUBE, M., AND L. BARBOUR (1984): "Factors Related to the Decision to Leave an Abusive Relationship," *Journal of Marriage and the Family*, 46, 837–844.

TAUCHEN, H., AND D. WITTE (1995): "The Dynamics of Domestic Violence," *American Economic Review*, 85(2), 414–418.

TRUMAN-SCHRAM, D., ET AL. (2000): "Leaving an Abusive Dating Relationship: An Investment Model Comparison of Women who Stay versus Women who Leave," *Journal of Social and Clinical Psychology*, 19(2), 161–183.

WEISS, Y. (1997): *The Formation and Dissolution of Families: Why Marry? Who Marries Whom? and What Happens in Divorce?* Amsterdan: North Holland.

YVENGAR, R. (2009): "Does the Certainty of Arrest Reduce Domestic Violence? Evidence from Mandatory and Recommended Arrest Laws," *Journal of Public Economics*, 93(1), 85–98.

ZIMMERMAN, P. (2004): "A Theoretical Analysis of Alcohol Regulation and Drinking-Related Economic Crime," *European Journal of Law and Economics*, (18), 169–190.

Divorce has increased significantly in recent years. Evidence in the USA suggests a 400% growth in the percentage of divorced individuals compared to married ones between 1960 and 2015. The emotional behavior of partners, which oftentimes ends up in reciprocal verbal aggression and physical violence has emerged as one of the main explanations for the growing divorce rate. The goal of this work is to theoretically explain the relation between emotional behavior, empowerment and domestic violence. For such purpose, we build a general equilibrium model where family violence is the result of both social behavior and personal traits. We demonstrate that a psychosocial follow-up policy of aggressors leads to a family violence reduction in its intensive margin, also resulting in an increase in remarriage rates. At the same time, a female empowerment policy leads to a decrease in the extensive violence margin and an increase in divorce rates.