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## THE SEXUAL DIVISION OF LABOUR WITHIN COUPLES IN FRANCE ACCORDING TO THEIR MARITAL STATUS A STUDY BASED ON TIME-USE SURVEYS FROM 1985-1986, 1998-1999 AND 2009-2010

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## **The sexual division of labour within couples in France according to their marital status**

*A study based on time-use surveys from 1985-1986, 1998-1999 and 2009-2010<sup>1</sup>*

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## **Abstract**

The purpose of this article is to analyse the division of domestic tasks within the couple according to their marital status as well as how this has changed since the 1980s based on three INSEE time-use surveys (1985-86, 1998-99 and 2009-10). The ordinary least squares (OLS) method is complemented by the matching method, which is used to account for the self-selection of the couples in terms of their observable characteristics in different forms of union (marriage, cohabitation and civil partnerships for 2009-10). In 1985-86 and in 1998-99, the degree of the sexual division of labour was higher for married couples than for cohabiting couples. For 1985-1986, this difference is explained by differences in the characteristics of the couples who were cohabiting. However, by the late 1990s cohabiting couples had opted for an organization that was less unequal than that of married couples, all else being equal. For 2009-10, the average amount of domestic work performed by women was about the same whether they were cohabiting or married (72% and 73.5%), but the level was significantly lower for women in civil partnerships (65.1%). These differences are not due to differences in the observable characteristics of the couples based on the type of union. The article shows that this difference is due to a process of the couples' self-selection based on their values: in 2009-10, civil partnerships attracted more "egalitarian" couples who, prior to the introduction of civil partnerships, had opted to cohabit.

**Key words:** Sexual division of labour, marital status, family economics, time-use survey, matching method.

**JEL codes:** J12, J22.

## Introduction

In France, the specialized model of the married couple along the lines of the male breadwinner model has been marginalized by the increase in the ranks of working women since the 1960s. But this shift was not accompanied by an equal rebalancing of the sexual division of labour in domestic production: on average, women perform 71% of the housework (cleaning, cooking, laundry) and 65% of the family work (Champagne, Pailhé and Solaz, 2015). While the time women spend on domestic work has decreased since the 1980s, the amount men spend has remained stable. An analysis of the division of labour within couples, not averaged over the population, helps to refine these trends. Indeed, women in couples perform more housework and family work than do other women (Roy, 2012). The arrival of children reinforces the unequal sharing of tasks within the couple, even though fathers are devoting more time to the children, as the amount spent by mothers has also increased since the 1980s (Régnier-Loilier et Hiron, 2010; Champagne, Pailhé et Solaz, 2015; Ricroch, 2012).

Alongside the persistence of the sexual division of labour within couples, the rise of cohabitation and divorce has further destabilized the model of the specialized married couple. These trends reflect the growth of individualism and the recourse to different types of arrangements, ranging from autonomy to communal life (De Singly, 2007). Since the 1990s, cohabitation is no longer the preserve of the younger generations, and is now a socially accepted form of union. The arrival of a child does not systematically lead to marriage, although some couples do eventually marry after living together for several years (Toulemon, 1996). Today, one out of every two children is born to a cohabiting couple. France ranks alongside Sweden and Denmark among the European countries with the highest percentage of children born outside marriage (Prioux, 2009). But unlike the Nordic countries, where marriage and cohabitation are regulated (Sanchez Gassen and Perelli-Harris, 2015), in France cohabitation is still not very institutionalized (Martin and Théry, 2001). The “Civil Solidarity Pact” [*Pacte civil de solidarité* – PACS] introduced in 1999 provides a legal framework that is intermediary between cohabitation and marriage.

The various forms of union (marriage, cohabitation and civil partnerships) can be distinguished by the level of regulation applied to them. The legal framework for marriage guarantees protection and compensation for women’s overinvestment in family and domestic tasks compared to men (including certain family benefits associated with pension rights and a compensatory allowance). In case of divorce, these protections limit the impact of the sexual division of labour on women’s standard of living. Despite this, the fall in the standard of living after a divorce is greater for women than for men (Bonnet, Garbinti and Solaz, 2016; Martin and Périer, 2015). There is, however, no special protection for cohabiting couples. The preference given to marriage implies that couples who are not united before the law cannot claim special state assistance (except for transfers concerning children) (Martin and Théry, 2001).

The relationship between the sexual division of labour in couples and their marital status has not been studied much in the economic and sociological literature pertaining to France. Yet it raises important questions about how well the social welfare system (social, fiscal and legal) corresponds to marital behaviour and the influence of gender norms. Given that the sexual division of labour continues to exist within cohabiting couples, the hierarchy in the regulation of different types of union (marriage, civil partnerships and cohabitation) could affect gender equality, particularly in cases of separation.

The purpose of this article is to analyse the extent of the sexual division of labour according to couples’ marital status and determine how the division of domestic work has changed since the 1980s, based on three INSEE time-use surveys (1985-86, 1998-99 and 2009-10). The point is to identify the

factors that explain differences in terms of the organization of work based on marital status. The first section is devoted to a review of the international literature on the determinants of both marital choices and the division of labour within couples. The case of France in terms of the regulation of relationships is examined in detail. The second section presents descriptive statistics as well as the results of an econometric analysis conducted using two methods. The sexual division of labour is measured by the share of domestic work performed by women within the couple. The various relationship statuses used are marriage, cohabitation and civil partnerships for the years 2009-10. A cross-sectional analysis is performed, as the data do not permit following a couple over the years. However, the use of the “Decisions within the couples” [*Décisions dans les couples*] module specific to the 2009-10 survey is used to integrate variables related to individual marital trajectories (including the length of the union) and to confirm the results.

In 1985-86 and in 1998-99, the sexual division of labour was more extensive for married couples (80.9% in 1985-86, 82.2% in 1998-99) than for cohabiting couples (75.1% in 1985-86, 75.1% in 1998-99). For 1985-86, the gap is explained by differences in observable characteristics between the two types of union. However, in the late 1990s, cohabiting couples opted for a less unequal organization than did married couples, all else being equal. While at the beginning of the period, cohabitation was often a “prelude to marriage” (Villeneuve-Gokalp, 1990), by the late 1990s it had become a widespread and socially accepted alternative to marriage (Toulemon, 1996; Prioux, 2009). For the 2009-10 period, the average domestic work performed by women is about the same whether they cohabit or are married (72% and 73.5%), but it is significantly lower for women in civil partnerships (65.1%). These differences are not due to differences in the observable characteristics of couples based on the type of union. Two non-exclusive interpretations are possible. A “marital status” effect could explain the different extents of the sexual division of labour by type of union, even without determining the direction of causality: marriage could encourage couples to specialize, or role specialization could lead couples to marry due to the protection associated with this type of union. This does not explain the unequal division of labour observed in 2009-10 within cohabiting couples. A phenomenon involving the self-selection of couples that takes place based on values, unobserved and not available in the data, could explain the dynamics seen in the three surveys used: in 2009-10, civil partnerships would attract the most egalitarian couples in terms of their gender ideology, while prior to the introduction of the PAC civil partnerships these couples opted for cohabitation.

## **1. Specialization of couples and marital status: a review of the literature**

### *1.1. Why do couples specialize?*

Family economics provides an analytical framework for understanding the sexual division of labour within couples based on the relative resources of the two partners. In the neoclassical approach, a couple is the association of two individuals who pool their spending and resources. The gains<sup>2</sup> from living as a couple come from economies of scale relative to living alone and to a division of labour between domestic production and market production. A decision to live together is the result of a comparison of all the gains accruing to the partners relative to those accruing to a single person (Browning, Chiappori and Weiss, 2014). Several theoretical approaches have been developed to explain how couples organize their respective work and how the surplus generated by living together

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<sup>2</sup> In the theoretical literature underpinning family economics, the different forms of union are not often distinguished.

is shared. Becker (1973, 1981) relies on a utility function common to the couple (called the “unitary” model) that is maximized by a “benevolent despot” for the household as a whole, under a budget constraint grouping all the family’s resources. Assuming a comparative advantage in domestic production for women, the model predicts that the mode of production of goods and services in the most efficient family is gendered specialization.<sup>3</sup> This model has been criticized theoretically (see especially Bustreel, 2001) and empirically (see in particular Fortin and Lacroix, 1997; Browning and Chiappori, 1998; Cherchye and Vermeulen, 2008; Cherchye et al., 2009; Ponthieux, 2012).

Other studies have looked at the individual preferences of the partners and their bargaining power within the household. In bargaining models, the threat point is a “divorce”, understood as a breakdown of the couple, without specifying the marital status of the union (Manser and Brown, 1980). In non-cooperative collective models, the threat point is based on the intra-household distribution of resources, and the threat is that of a non-cooperative equilibrium within the marriage that reflects gender norms (Lundberg and Pollak, 1993, 1994). Finally, cooperative collective models are based on a rule for sharing resources between household members (Chiappori, 1988; Bourguignon and Chiappori, 1992; Alderman et al., 1995; Behrman, 1997). Bargaining power influences the degree of specialization of labour within the couple, based on the actual or potential contribution of each partner to income. The public transfers granted to the couple during their life together also alter the relative bargaining power of the partners. Similarly, the consequences of a breakdown for each of the partners (as well as the degree of competitiveness in the marriage market and the state of the labour market) and the terms of a potential rupture, which depend in particular on the legal context specific to each type of union (for example, the right to a compensatory allowance in case of a divorce), also affect the bargaining power.

Among the empirical approaches, some studies evaluate the effect of the paid work of both partners on the distribution of domestic work. Women working full-time contribute less to the domestic work than women who are inactive or working part-time, and dual-earner couples are more egalitarian in terms of sharing domestic work (Gershuny, 2000). Men who spend less time in paid work spend more time on domestic work (Bianchi et al., 2000). When both partners work full time, the distribution of domestic and family work becomes less unequal as the woman’s salary climbs, but women still perform a larger share than do their partners (Ponthieux and Schreiber, 2006).

Finally, an approach based on gender ideology and gender norms nuances the connection between economic exchanges and the sexual division of labour. Gender ideology can be measured using a scale ranging from upholding an egalitarian organization of the couple (people favourable to sharing domestic and family responsibilities) to upholding a conservative organization of the couple (people favourable to the male breadwinner model). Men who have egalitarian values are more involved in housework than men with conservative values (Greenstein, 2000). Finally, the theory of “gender deviance neutralization” is based on the fact that gender norms influence the sexual division of labour via the everyday construction of identity. Men perform so-called “masculine” tasks and reject the so-called “feminine”. Men who are financially dependent on their partners compensate for this deviance from gender norms by investing less in domestic chores. For the same reasons, women working full-time tend to increase their contribution to domestic duties if their partner loses his job (Brines, 1994; Greenstein, 2000; Evertsson and Neramo, 2004). Other studies have nevertheless shown the fragility and lack of robustness of these approaches. It turns out that the injunction to perform gender on

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<sup>3</sup> To explain the gendered nature of specialization, Becker uses the biological differences between the sexes: women returning from pregnancy have a comparative advantage in domestic production in general.

decisions to share housework within couples has less impact than the relative bargaining power of each partner through their wages (Sullivan, 2011; England, 2011; Ponthieux and Meurs, 2015).

### *1.2. Marital status and the division of domestic and family work*

The organization of the couple, marital behaviour and the degree of institutionalization of the various possible statuses of couples are linked and depend in particular on social perceptions associated with each type of union. According to the typology of Heuveline and Timberlake (2004), cohabitation can be a prelude to marriage, as in the Central European countries. It attracts young couples without children, and amounts to a stage in the life cycle and in life as a couple, with these couples eventually marrying. The domestic division of labour varies little with marital status. This situation closely resembles cohabitation in France in the early 1980s (Villeneuve-Gokalp, 1990; Toulemon, 1996). Cohabitation can be an alternative to living alone and can correspond to an unstable form of union, as in the Anglo-American countries. The partners do not share household tasks, nor do they specialize (Bianchi et al., 2014; Kalenkoski et al., 2007). Cohabitation can represent an alternative based on a rejection of marriage view as a patriarchal institution, as in the southern European countries, particularly Italy. Here it is a form of marginalized union that is socially stigmatized and unregulated. It attracts individuals with a specific profile, in particular women with a high educational level who are unattached to family traditions with partners who hold to egalitarian values. In Italy, cohabiting women have a higher labour force participation rate than married women, and the volume of domestic and family work they perform is much lower than that done by married women: the division of housework and family work in cohabiting couples is significantly less unequal than in married couples (Bianchi et al, 2014; Dominguez-Folgueras, 2012). Finally, cohabitation may be an alternative type of union that is not particularly distinguished from marriage and is widely accepted socially, as in the Scandinavian countries. Cohabiting couples have rights similar to those granted to married couples (Sanchez Gassen and Perelli-Harris, 2015), and the organization within the couple is less specialized than in other countries (Davies, Greenstein and Mark, 2007).

To a greater or lesser extent, depending on the country, cohabiting couples adopt patterns of sharing domestic and family work that are more egalitarian than married couples (Dominguez-Folgueras, 2012; Davies, Greenstein and Mark, 2007), with regulations<sup>4</sup> that vary in accordance with the different types of union (Sanchez Gassen and Perelli-Harris, 2015). The causal relationship between the couple's marital status and their specialization, hereinafter called the "marital status" effect, is undetermined in an *a priori* sense. Couples can specialize after marrying in response to the social protections and transfers associated with marriage. In this case, the regulatory framework for marriage offers an incentive for couples to specialize; women are encouraged to focus on housework and family tasks and men on the public sphere. Couples can also specialize and then marry in order to receive the protection afforded to their organization. From this perspective, marriage is a response to the couple's specialization. The "marriage" institution would then be viewed as an insurance system that guarantees the protection and commitment of the working partner, the man, to the partner who specializes in domestic work, the woman. This protection extends beyond the union itself, with a right to a compensatory allowance in case of divorce. The two relationships do not exclude one another: it is possible that couples begin to specialize before marriage (especially with the arrival of a child), then marry as a result, reinforcing the specialization. Barg and Beblo (2012) showed that German couples who anticipate a gender specialization in roles marry, and then the marriage consolidates this

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<sup>4</sup> The term "regulation" refers to all policies pertaining to the couple (the couple's fiscal and social welfare rights and the rights and duties between the partners – see Périvier, 2015).

specialization. The tendency of married couples in Germany to specialize more than cohabiting couples do is mainly due to differences in the observable characteristics of these couples and to their greater likelihood of having a child.

Socio-economic factors thus condition both the division of labour within the couple and the choice of marital status; this phenomenon is referred to hereafter as the “observable characteristics” effect.<sup>5</sup> The greater specialization of married couples with respect to cohabiting couples observed in many countries may be due to differences in the observable characteristics of the two partners that are more or less favourable to specialization (educational level, salary, etc.). In this case it can be expected that in the cohabiting couples the women are more educated and better integrated into the labour market than the married women, as this form of union offers less protection (Kiernan, 2002).

Economic resources alone cannot explain the sexual division of labour based on the type of union: married women bear a greater burden of the domestic work compared to cohabiting women, regardless of their respective incomes (Lück and Hofacker, 2003; Landwerlin, 2005). Married couples behave more in accordance with the roles assigned to the partners by gender norms, and specialize more than do unmarried couples (Shelton and John, 1993). Likewise, wedding ceremonies reinforce the couple’s behaviour in line with the social norms associated with marriage and widen the differences in the degree of specialization between the two types of union (Kalmijn, 2004). Thus, the values upheld by the two members of the couple are also a selection factor. This phenomenon is hereafter called the “value” effect: couples who favour equality between women and men tend to reject the institution of marriage and opt for alternative forms of union. The two forms of self-selection of couples in the different unions (observable characteristics on the one hand and values on the other) are linked: for example, in the most educated couples the partners share more egalitarian norms (Dominguez-Folgueras, 2012).

This literature review indicates that the institutional environment specific to each type of union (social protections and economic benefits granted to married couples) or the meaning given to cohabitation and the spread of this type of union explain the differences across countries. The following sections explore this issue more deeply in France. Does the organization of work in couples differ in accordance with marital status? Do the couples opting for one or the other form of union differ in terms of their observable characteristics, or is their choice related to the more or less egalitarian values that both partners hold?

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<sup>5</sup> Oppenheimer (2003) found that in the United States men’s educational level has a positive impact on the probability of a first marriage and on the transition from cohabitation to marriage.

### *1.3. The French case: a challenge for equality*

In France, as in many countries, the welfare system and the family law were built on the basis of a specialization in the roles of partners (Badel, Gilles, Laborde and Subrenat, 2003; Périvier, 2015). Fiscal and social redistribution aimed at supporting specialized married couples and limiting the opportunities for women's economic empowerment. This institutionalized family model in part endorsed a situation characterized by this specialization of couples. In this way, the welfare state guaranteed protection for married women and compensation for their investment in family and household duties (for example, survivors' benefits, rights and duties between the partners with compensation provided in case of divorce). But this framework was also an instrument promoting the specialized married couple by making it financially accessible to all households (with in particular the system of the marital allowance that benefits married couples with large earnings gaps between the partners).

Starting from the 1970s, the male breadwinner model based on the married couple has been marginalized by women's entry into the labour force, the decline of marriage, the rise of cohabitation, and the increasing number of divorces (see in particular INSEE, 2015). These trends are the result of greater individual freedom with respect to family institutions: the family, though still a reference entity, has become a place of "self-revelation" (De Singly, 2007). But these changes have not resulted in an overhaul of the regulation of unions and their breakups, which raises issues about gender equality.

With respect to the rise in divorces, the legal framework of marriage has not been sufficient to offset the loss in living standards experienced by the former spouses after a divorce, even though maintenance obligations (right to a compensatory allowance) and related rights (survivor benefits) have helped to limit the impact. Despite this, after a divorce or the end of a civil partnership, women's standard of living falls by 19%, compared with 2.5% for men, and this is only partly offset by government transfers and the return to employment of divorced women who were inactive during their marriage (Bonnet, Garbinti and Solaz, 2016). In the case of splitting up, then, the cost of the sexual division of labour during marriage weighs more heavily on the woman's standard of living than on the man's (Martin and Périvier, 2015).

Since the late 1990s, cohabitation has been a socially accepted mode of union, and the arrival of a child no longer triggers a marriage. In France, as in the Nordic countries, the proportion of children born outside marriage is among the highest in Europe. But the differences in social, tax and legal regulations between the two forms of union are much more marked in France than in the Nordic countries. Cohabitation is not subject to any kind of compensation or obligation towards the partner who specializes in domestic production and family work, even partially.<sup>6</sup> If the partnership ends, the risk associated with the sexual division of labour for cohabiting couples is then borne entirely by the woman (also if the partner dies during retirement).

The creation of civil partnerships has partly and gradually incorporated some protections initially reserved for marriage (Table 1). Martin and Théry (2001) explain this reluctance to treat cohabitation as a fully distinct form of union by fear of the rise of individualism and by the fact that no claim from cohabiting

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<sup>6</sup> In borderline legal situations, the concrete situations can be taken into account in case of separation.

couples has been accepted as a counterbalance, for example in terms of the right to a compensatory allowance in case of separation. The introduction of civil partnerships is a symptom of the rejection of cohabitation as a form of union with rights and duties: “no duties, thus no rights with respect to the welfare state” (Martin and Théry,2001).

Understanding the sexual division of labour in couples in relation to their marital status is thus an important issue for equality between men and women. The few studies available show that women perform more domestic work than men regardless of whether they are married or cohabiting. Similarly, the paid working hours of married women and cohabiting women are roughly the same (within 4 minutes) (Bianchi et al., 2014). These studies focus on individual averages calculated on all the people living in couples. Dominguez-Folgueras (2012) found that in France unmarried couples are more egalitarian than married couples with regard to the distribution of domestic chores, but the data used (MTUS<sup>7</sup>) does not make it possible to distinguish between cohabiting couples and couples in civil partnerships.

This article examines this matter in greater depth by looking at couples, and not individuals, to show the links between the sexual division of labour and marital status in France. Taking account of civil partnerships as a form of union distinct from marriage and cohabitation helps to clarify the existing literature with respect to behaviour in terms of the division of labour within couples. Time-use surveys from 1985-86, 1998-99 and 2009-10 are used to explore changes in behaviour within couples based on marital status. For the year 2009-10, the “Decisions within couples” module [*Décisions dans les couples*] specific to this survey is used to refine the results.

**Table 1: Social protection and legal and fiscal programmes for different types of union in France**

|                    | Marriage  | Civil partnership (PACS)   | Cohabitation   |
|--------------------|---|--|--|
| Formality          | <ul style="list-style-type: none"> <li>- Act performed before a civil registrar</li> <li>- In the absence of a prior marriage contract, the spouses are married under the legal regime of community property limited to acquired assets</li> </ul>            | <ul style="list-style-type: none"> <li>- Joint declaration before the Court Clerk (or civil partnership agreement before a Notary Public)</li> </ul>           | <ul style="list-style-type: none"> <li>- Cohabitation without formality</li> </ul>                                   |
| Obligations        | <ul style="list-style-type: none"> <li>- Material aid and reciprocal assistance</li> <li>- Contribution to the marriage burden in proportion to respective capabilities</li> <li>- Joint solidarity for current debts</li> </ul>                              |  | <ul style="list-style-type: none"> <li>- No obligation</li> </ul>  |
| Income tax         | <ul style="list-style-type: none"> <li>- Common taxation with joint solidarity of the spouses or partners for payment (<i>since 2005 for civil partnerships; before 2005 separate taxation during the first 3 years of partnership then joint</i>)</li> </ul> |  | <ul style="list-style-type: none"> <li>- Separate taxation</li> <li>- No joint solidarity</li> </ul>                 |
| ISF wealth tax     | <ul style="list-style-type: none"> <li>- Joint taxation</li> </ul>  |  | <ul style="list-style-type: none"> <li>- Joint taxation in case of declared cohabitation</li> </ul>                  |
| Inheritance rights | <ul style="list-style-type: none"> <li>- The surviving spouse inherits in full and benefits from a right to the home</li> </ul>   | <ul style="list-style-type: none"> <li>- Civil partners do not inherit from one another: a will is necessary</li> <li>- Temporary right to the home</li> </ul> | <ul style="list-style-type: none"> <li>- Cohabitants do not inherit from one another: a will is necessary</li> </ul> |

<sup>7</sup> Multinational Time Use Surveys.

|                                      |   |  |
|--------------------------------------|---|--|
| Transfer duties                      | - Exemption from inheritance tax ( <i>since 2008 for civil partnerships</i> )<br>- For a gift of current goods, abatement and then application of a progressive tax rate (from 5% to 45%) | - No exemption on inheritance tax<br>- Transfer duty of 60% after abatement  |
| Health insurance and social security | - A partner without their own social security coverage benefits from their partner's coverage, regardless of marital status<br>- Conditional right to survivor's benefit                  |  |
| Pension rights                       | - Conditional right of the widow or widower to a survivor's pension   | - No right to a survivor's pension   |
| Divorce / Dissolution                | - Divorce pronounced legally by a judge in the family court<br>- Grant of a compensatory allowance intended to correct disparities in living standards related to the divorce             | - Mutually agreed termination (Notary Public) or unilateral (bailiff)<br>- No compensatory allowance<br>- The civil partnership terminates upon marriage |
|                                      |   | - Termination freely<br>- No compensatory allowance  |

Source: Jurisdefi, *La vie du réseau*, March 2013, no. 5

## 2. The sexual division of labour in the couple according to marital status

### 2.1. What changes between 1985-86, 1998-99 and 2009-10?

For the 1985-86 and 1998-99 surveys, two types of couples are distinguished: married couples and cohabiting couples. Since the PACS law on civil partnerships was passed in 1999, the 2009-10 survey added PACS couples. Married couples are those who declare their marital status to be “married” (or “remarried”), PACS couples are those who say they have entered a civil partnership, and cohabiting couples are couples who live together but have not declared themselves married or in civil partnerships. Given that there is no longitudinal data, it is impossible to follow the marital “trajectory” of the couples. This means that the grouping of couples by type of union ignores the past unions of each partner. Marital status is seen in a cross-sectional view, and therefore the couples used in the samples include individuals who may have previously been married or living in cohabitation with another partner or in a civil partnership, including with the same person with whom they were married at the time of the survey (a detailed breakdown of the samples used for each type of union is presented in Table A2.1, Annex 2).

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### Text box

#### The time-use surveys, the data and the work samples

The three INSEE time-use surveys for 1985-86, 1998-99 and 2009-10 were conducted over 12 months in metropolitan France, and include:

- A questionnaire describing the household composition,

- A questionnaire on the person surveyed,
- An individual activity diary (broken down by segment of 5 minutes for 1985-86 and 10 minutes for the two other surveys).

For the 1985-86 and 1998-99 surveys, the individuals complete a diary for each day of the week (which can be a day of the week or of the weekend). For the 2009-10 survey, each individual can fill out a diary for a weekday except the weekend and a diary for one day of the weekend. When an individual is surveyed, this necessarily implies that it is possible that the partner will be too<sup>8</sup>, and both partners fill out their diary on the same day.

The sample used for the analysis includes households for which:

- The reference person lives as part of a couple with another member of the household.<sup>9</sup>
- The household includes only adult couples (with or without children): more complex households, with other housemates (accommodation of parents or relatives) are excluded from the analysis.
- At least one member of the couple is working. Also excluded are couples in which one partner cannot work (student, retired, disabled, etc.).
- Only couples in which both partners have filled in the diaries are retained (these notebooks can be filled for a day of the work week or weekend).
- Only couples in which both partners are between age 25 and 55 are included.
- Same-sex couples are excluded. Their low representation in the databases makes it impossible to control for the econometric analysis.

The samples used for the descriptive statistics include 3334 couples for 1985-86, 2761 for 1998-99 and 2875 for 2009-10. Couples and individuals for whom some variables needed to conduct the econometric analysis were not filled in were eliminated, so that the 1998-99 survey and the 2009-10 survey had samples of 2715 and 2873 couples respectively.

Intermediate domestic work includes the following activities: sewing, shopping, repairing, gardening and fishing. Core domestic work includes the following activities: cooking, dishwashing, laundry, putting away, management, trips, child care, adult care, and miscellaneous. The nomenclature of activities related to core domestic work and the perimeter used for the analysis are detailed for the three surveys in Table A1 (Annex).

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The scope of domestic work used for the analysis includes the most burdensome everyday domestic activities: cooking, dishwashing, laundry, putting away and cleaning, household management, trips, caring for children, caring for adults, and miscellaneous.<sup>10</sup> This is the definition used by Roy (2012). This rules out tasks considered intermediate or semi-leisure: sewing, repairing, gardening, fishing, etc.

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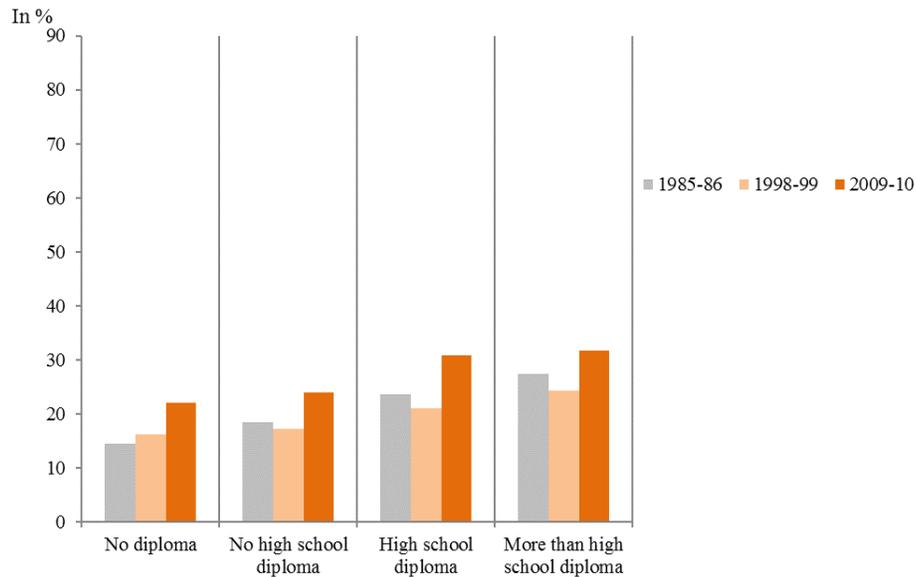
<sup>8</sup> In practice, it is common for one partner not to fill in the diary properly, which requires not using these couples in the sample insofar as it concerns the total domestic labour time performed by the couple; this leads to attrition.

<sup>9</sup> Only the 2009-10 time use survey has a variable relative to the fact that the partners have lived together for over a year, and this variable has not been filled in well: not retaining the couples for which the value is missing would have led to reducing the sample size by 1108 couples. The “decision in the couples” module, which includes a variable relating to the duration of the union, is used for the year 2009-10 in order to confirm the results.

<sup>10</sup> Maintenance of heating and water, other household maintenance work, moving house.

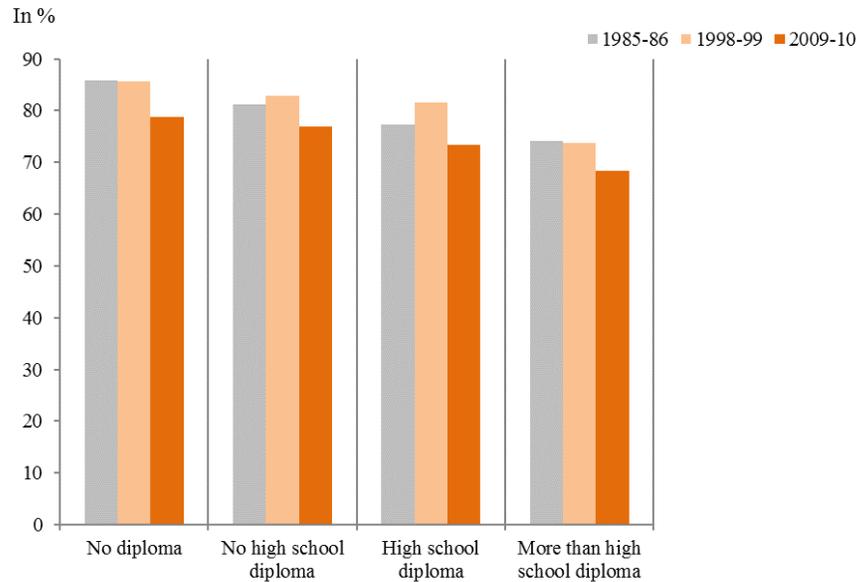
Regardless of the reporting year, the share performed by women declines as their level of education rises. Conversely, as men’s educational level rises, so does the share of the domestic work that they perform (Figures 2a and 2b). This is consistent with the results of other studies on this subject (Anxo, 2002; Bianchi et al., 2000; Gershuny, 2000). Furthermore, the total domestic workload decreases with the couple's income, which is due to outsourcing a greater share of that work (by e.g. employing a housekeeper).

**Figure 1a: Change in the share of domestic work performed by the man in couples, according to the man's educational level, in %**



Sources: Time use survey 1985-86 (ncouple= 3334 ); Time use survey 1998 -99 (ncouple= 2761); Time use survey 2009-10 (ncouple=3875); Insee.  
 Scope: Couples cohabiting in which the two members filled out diaries and in which at least one of the members is active.

**Figure 1b: Change in the share of domestic work performed by the woman, according to the woman's educational level, in %**



Sources: Time use survey 1985-86 (ncouple= 3334 ); Time use survey 1998 -99 (ncouple= 2761); Time use survey 2009-10 (ncouple=3875); Insee.  
 Scope: Couples cohabiting in which the two members filled out diaries and in which at least one of the members is active.

Table 2 shows changes in the weekly time spent on domestic work and paid work by women and men living in couples, according to their marital status<sup>11</sup>. The time spent on domestic work by cohabiting women has fallen over 25 years (1h21 per week) but that of married women fell even more sharply (down 5h44 per week); the gap between the two has fallen from 5h21 in 1985-86 to 58 minutes in 2009-10. The difference between the hours spent in paid work by married women and by cohabiting women has also fallen significantly, from 1h20 in 1998-99 to 17 minutes in 2009-10.

Finally, the time spent by women on domestic tasks is inversely related to the time they devote to paid work: in 2009-10, an unemployed woman spent an average of a little more than 27 hours per week on domestic tasks (i.e. 85% of the domestic work done in the couple) against a little more than 18 hours (75%) for a woman working part time, and 15 hours 30 minutes for one working full time (70%).<sup>12</sup> This

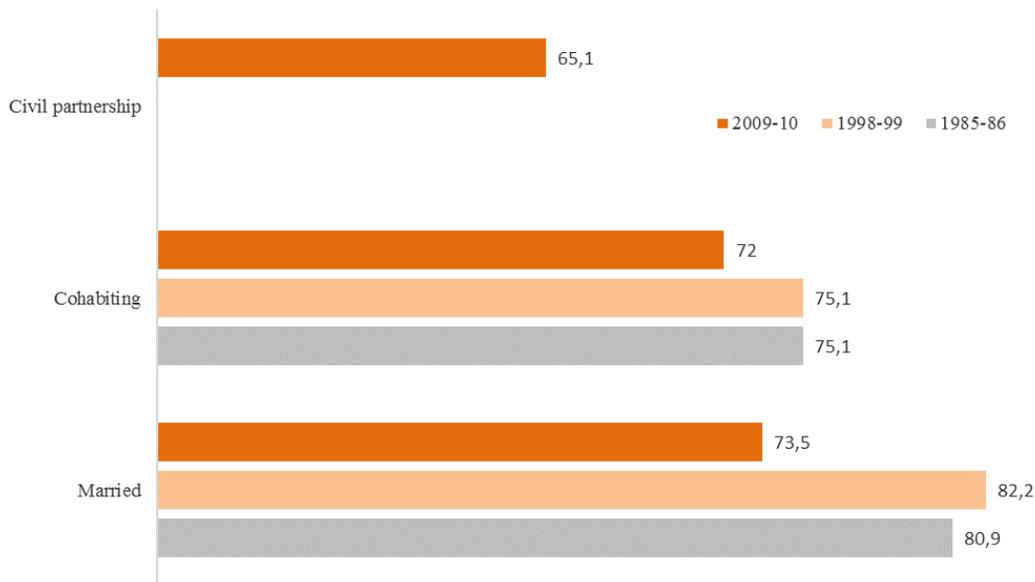
<sup>11</sup> The data from the three surveys are not strictly comparable (Brousse, 2015).

<sup>12</sup> In 1998-99, an unemployed woman spent on average just under 30 hours a week on domestic work (i.e. 90% of the domestic work done by the couple) against more than 20 hours for a woman working part-time (83%), and over 17 hours for a woman working full-time (78%). In 1985-86, an unemployed woman spent an average of just over 32 hours per week on domestic work (89% of the domestic work done by the couple) against a little more than 21 hours for a woman working part-time (80%), and slightly more than 18 hours for full-time women workers (76%).

trend also holds for men, but for much lower amounts of time: in 2009-10, a man in full-time work spent an average of six hours 30 minutes on housework, less than half that of a woman working full time.

With regard to the share of the domestic work performed by women in the 1980s and 1990s, the gap between married couples and cohabiting couples was substantial (Figure 2): on average, women in married couples performed 80.9% in 1985-86 (82.2% in 19-99) of domestic tasks against 75.1% in 1985-86 (75.1% in 1998-99) for women in cohabiting couples. However, in 2009-10, the share of domestic work performed by women is much the same, whether married (73.5%) or cohabiting (72%). This convergence is the result of two separate trends: the share carried out by women has declined significantly in married couples, which is part of a general downward trend in the time women spend on domestic work. Thus the extent of the sexual division of labour in married couples grew closer to the level in cohabiting couples. Simultaneously, the introduction of civil partnerships in 1999 changed the institutional context: women in partnerships are the ones who perform the lowest share of domestic work (65.1%). The men in partnerships carry out 2 hours and 28 minutes more housework than married men, compared with a gap of only 2 minutes between married men and cohabiting men. Married men spend 1 hour and 13 minutes more in paid work than do men in civil partnerships. Men in partnerships spend more time on family life than either married or cohabiting men.

**Figure 2: Share of the domestic work performed by the woman in the couple according to marital status, in %**



Sources: Time use survey 1985-86 (ncouple= 3334 ); Time use survey 1998 -99 (ncouple= 2761); Time use survey 2009-10 (ncouple=3875); Insee.  
 Scope: Couples cohabiting in which the two members filled out diaries and in which at least one of the members is active.

**Table 2 :**

| Averages per week  | Marriage |          |          | Cohabiting |          |          | Civil partners | Marriage/cohabiting difference |          |               | Marriage/civil prtncs diff. |
|--|----------|----------|----------|------------|----------|----------|----------------|--------------------------------|----------|---------------|-----------------------------|
|  | 1985-86  | 1998-99  | 2009-10  | 1985-86    | 1998-99  | 2009-10  | 2009-10        | 1985-86                        | 1998-99  | 2009-10       | 2009-10                     |
| Paid work of the woman   | 34h38min | 32h21min | 33h57min | 36h50min   | 33h41min | 34h14min | 34h47min       | -2h12min                       | -1h20min | -17min        | -50 min                     |
| Paid work of the man   | 41h39min | 38h4min  | 40h18min | 40h47min   | 37h41min | 39h14min | 39h05min       | 52min                          | 23min    | 1h04min       | 1h13 min                    |
| <i>Woman's share of paid work (in %)</i>   | 44,9     | 45,6     | 45,8     | 47,4       | 46,8     | 46,4     | 46,8           | -2.5 % pt                      | -1,2 pts | -0,6 pts de % | -1 % pt                     |
| Domestic work performed by the woman   | 23h23min | 20h47min | 17h39min | 18h02min   | 17h38min | 16h41min | 15h45min       | 5h21min                        | 3h09min  | 58min         | 1h54min                     |
| Domestic work performed by the man   | 5h12min  | 4h34min  | 6h26min  | 5h40min    | 5h38min  | 6h28min  | 8h54min        | -28min                         | -1h04min | -2min         | -2h28                       |
| <i>Share of domestic work performed by the woman (in %)</i>  | 80,9     | 82,2     | 73,5     | 75,1       | 75,1     | 72       | 65,1           | 5,8 % pt                       | 7,1 % pt | 1,5 % pt      | 8,4 % pt                    |
| <b>Total number of couples</b>   | 3091     | 2240     | 2014     | 243        | 521      | 683      | 178            |                                |          |               |                             |
| Sources: Time-use surveys, 1985-86, 1998-99, 2009-10, Insee.   |          |          |          |            |          |          |                |                                |          |               |                             |
| Scope: Couples cohabiting in which two members have filled out the diaries and at least one of whom is active. |          |          |          |            |          |          |                |                                |          |               |                             |

These differences are due in part to differences in the profiles of couples according to the type of union. Some forms of union can attract individuals with specific characteristics in terms for example of educational level, salary, or number of dependent children. Individuals in civil partnerships are more qualified than those in other types of couples, and they are younger (Annex 2, Table A2.2). These differences may explain why civil partnerships were more egalitarian than married couples or cohabiting couples in 2009-10.

## *2.2 An estimate of the share of domestic work carried out by the woman*

The descriptive statistics indicate that the distribution of domestic work as well as the volume performed in couples is sensitive to the characteristics of the individual members of the couple (level of education, employment status of the two partners, type of occupation, etc.). Similarly, the household composition (number of children, for example) is an important factor. To compare the degree of specialization of the couples based on marital status, all else being equal, the share of domestic work performed by the woman in the couple is estimated for the three time-use surveys, initially using the ordinary least squares (OLS) method. The sample is the one used for the descriptive statistics (box).

The variable to be explained is the share of domestic work performed by the woman in the couple. It is defined as the ratio between the domestic work time spent by the woman and the domestic work time spent by both members of the couple. The explanatory variables include the individual characteristics and couple characteristics (Table 3). The reference couple is a married couple, both working full time, both with an educational level of less than the French Bac high school diploma, with no dependent children and residing in an urban area. The results obtained are interpreted in relation to this reference.

Some diaries are filled in for one weekend day and others one weekday. But the use of time and its distribution between partners vary between weekends and weekdays. To take this into account, an indicator used to control for the type of day during which the notebook was filled out was introduced into the estimate. For the 2009-10 survey, the diary variable is set to 1 if the partners completed their respective diary on a weekday (2 diaries per household), the value 2 if the two partners completed their respective diary on the weekend (2 diaries per household)<sup>13</sup> and the value 3 if one partner has filled in two diaries and the other one (3 diaries per household). The reference is the situation in which both partners each filled in two diaries (so 4 diaries for the household). For the 1985-86 and 1998-99 surveys, the “weekend” variable is set to 1 if the diaries were filled in on the weekend. Regardless of the year of observation, the share of domestic work performed by the woman is lower on weekends, as men are more involved on weekends.

Likewise, the estimates indicate that the amount of domestic work performed by women declines as the level of household income rises. Couples with higher incomes outsource more domestic tasks, especially

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<sup>13</sup> The partners fill out their individual diary on the same day.

those carried out by women (cleaning and laundry in particular)<sup>14</sup>. The variables related to household equipment and appliances indicate that in 1985-86, having a washing machine cut the share of domestic work performed by women by 4.3 percentage points: without a washing machine, laundry, a task performed mainly by women, is a time-consuming activity. In 1998-99 and 2009-10, this variable lost its significance, which is due to the increase in the levels of household equipment: by the late 1990s, most households with the characteristics of the sample have a washing machine.

The bargaining power of each member of the couple is approximated by the relative wages of the two partners.<sup>15</sup> The introduction of this variable is based on bargaining models (section 1) and relies on statistical analysis, including that of Ponthieux and Schreiber (2006), which indicates that the share of domestic and family work performed by the woman in couples who are both full-time employees is in inverse relation to her salary. The bargaining power is defined as the wage gap between the partners relative to the sum of the two salaries<sup>16</sup>. By definition, the wages of non-working women are not observed. A wage equation that takes into account selection on the labour market was estimated in order to assign these women a potential salary (see the results of the estimation in Appendix 3, Table A3<sup>17</sup>). This corresponds to the salary that these women could claim based on their observable characteristics (educational degree, past work experience, etc.); the state of the labour market is not taken into account, although it could reduce the level of the potential wages of non-working women and their actual ability to get a job if they were searching for one. The woman performs a smaller share of the domestic work whenever her bargaining power in the couple increases. This effect is significant only for 2009-10.

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<sup>14</sup> The non-significant effect of variables related to the use of paid outside help for 2009-10 is explained by the fact that the information provided by this variable is redundant with that for the level of income.

<sup>15</sup> Other parameters influence the bargaining power of the members of the couple, including the state of the labour market and the legal and institutional context. This latter partly determines the financial terms governing the breakdown of a couple and thus alters the bargaining power of each member.

<sup>16</sup> Two variants were tested: one in which the bargaining power is defined as the ratio between the hourly pay of the woman and the sum of the hourly wages of the couple, and the other by an indicator variable that equals 1 if the man's salary is more than twice the level of his partner. The different ways of integrating the relative bargaining power of the two members of the couple into the analysis do not alter the results profoundly.

<sup>17</sup> The information on wage income is not available for the 1985-1986 time-use survey. The variable measuring the bargaining power is thus not used for this survey.

| <b>Tablea 3: Results of LOS estimations</b>          |                   |                  |                    |                  |                    |                  |
|--|-------------------|------------------|--------------------|------------------|--------------------|------------------|
|  | <b>1985-86</b>    |                  | <b>1998-99</b>     |                  | <b>2009-10</b>     |                  |
| <b>Share of domestic work performed by the woman</b> | <b>Coef.</b>      | <b>Std. Err.</b> | <b>Coef.</b>       | <b>Std. Err.</b> | <b>Coef.</b>       | <b>Std. Err.</b> |
| Total no. of couples                                 | 3334              |                  | 2715               |                  | 2875               |                  |
| Total domestic working time                          | <b>-0,00005**</b> | 0,00002          | <b>-0,00011***</b> | 0,00003          | <b>-0,00009***</b> | 0,00003          |
| Diaries 2009-10                                      |                   |                  |                    |                  |                    |                  |
| 1  |                   |                  |                    |                  | 0,004              | 0,009            |
| 2  |                   |                  |                    |                  | -0,016             | 0,013            |
| 3  |                   |                  |                    |                  | 0,001              | 0,04             |
| Weekend diary 1998-99 and 1985-86                    | <b>-0,017**</b>   | 0,007            | <b>-0,030***</b>   | 0,009            |                    |                  |
| Revenue per uc couple 2009-10                        |                   |                  |                    |                  |                    |                  |
| 2  |                   |                  |                    |                  | <b>-0,032**</b>    | 0,013            |
| 3  |                   |                  |                    |                  | <b>-0,024*</b>     | 0,014            |
| 4  |                   |                  |                    |                  | -0,019             | 0,016            |
| Revenue 1998-99 and 1985-86                          |                   |                  |                    |                  |                    |                  |
| 1  |                   |                  | <b>-0,036***</b>   | 0,013            |                    |                  |
| 2  |                   |                  | <b>-0,040**</b>    | 0,017            |                    |                  |
| Recourse to a paid cleaner 2009-10 and 1998-99       |                   |                  | 0,005              | 0,009            | -0,001             | 0,009            |
| Recourse to an unpaid cleaner 2009-10                |                   |                  |                    |                  | -0,001             | 0,013            |
| Recourse to a cleaner, unpaid or not, 1985-86        | -0,008            | 0,009            |                    |                  |                    |                  |
| Microwave  |                   |                  | 0,012              | 0,01             | <b>0,032**</b>     | 0,015            |
| Dishwasher   | -0,003            | 0,007            | -0,008             | 0,009            | -0,005             | 0,011            |
| Washing machine                                      | <b>-0,043*</b>    | 0,023            | 0,034              | 0,036            | -0,004             | 0,046            |
| Inactive man   | <b>-0,085**</b>   | 0,034            |                    |                  | <b>-0,183**</b>    | 0,075            |
| Inactive woman                                       | <b>0,138***</b>   | 0,008            | <b>0,129***</b>    | 0,012            | <b>0,138***</b>    | 0,015            |
| Part-time man  | <b>-0,045***</b>  | 0,015            | <b>-0,080**</b>    | 0,035            | <b>-0,049*</b>     | 0,029            |
| Part-time woman                                      | <b>0,062***</b>   | 0,01             | <b>0,051***</b>    | 0,013            | <b>0,042***</b>    | 0,014            |
| Unemployed man                                       | <b>-0,128***</b>  | 0,017            | <b>-0,141***</b>   | 0,019            | <b>-0,125***</b>   | 0,018            |
| Unemployed woman                                     | <b>0,122***</b>   | 0,016            | <b>0,118***</b>    | 0,016            | <b>0,123***</b>    | 0,019            |
| Bargaining power                                     |                   |                  | -0,039             | 0,035            | <b>-0,133***</b>   | 0,029            |
| Civil partners (PACS)                                |                   |                  |                    |                  | <b>-0,045**</b>    | 0,018            |
| Cohabiting   | -0,013            | 0,012            | <b>-0,035***</b>   | 0,011            | -0,005             | 0,011            |
| Average age of couple                                | <b>0,002***</b>   | 0                | <b>0,003***</b>    | 0,001            | <b>0,001*</b>      | 0,001            |
| Age difference                                       | -0,001            | 0,001            | -0,002             | 0,001            | <b>-0,002**</b>    | 0,001            |
| Woman w/ high school diploma                         | <b>-0,025**</b>   | 0,01             | 0,014              | 0,013            | -0,017             | 0,014            |
| Woman w/ more than high school diploma               | <b>-0,030***</b>  | 0,01             | <b>-0,032**</b>    | 0,015            | -0,017             | 0,012            |
| Man w/ high school diploma                           | <b>-0,038***</b>  | 0,01             | -0,022             | 0,014            | <b>-0,066***</b>   | 0,016            |
| Man w/ more than high school diploma                 | <b>-0,067***</b>  | 0,011            | <b>-0,045***</b>   | 0,015            | <b>-0,060***</b>   | 0,011            |
| Presence of a child                                  | <b>0,018**</b>    | 0,008            | <b>0,026**</b>     | 0,011            | <b>-0,020*</b>     | 0,011            |
| Presence of a child under age 3                      | -0,002            | 0,008            | 0,01               | 0,013            | 0,017              | 0,013            |
| Rural area   | <b>0,027***</b>   | 0,007            | 0,013              | 0,009            | 0,008              | 0,009            |
| Constant   | 0,753             | 0,032            | 0,695              | 0,047            | 0,722              | 0,058            |

\*\*\* significance at threshold of < 1%, \*\* at threshold of < 5% and \* at threshold of < 10%.

In agreement with the literature, the paid working time of the two partners plays an important role in the division of the domestic work: when a member of the couple is less integrated in employment (inactivity, unemployment or part-time), then he or she tends to perform more of the work. The effect of having a single wage-earner on the amount of domestic work performed by the woman is positive and significant for all three surveys: in couples where the woman does not have a job, the share of domestic work she performs rises by about 14 percentage points. Similarly, when the man is inactive, the amount of domestic work performed by the woman falls, on the order of 8.5 percentage points in 1985-86 and around 18 percentage points in 2009-10<sup>18</sup>. Over a 25-year period, a greater substitutability of social time can be seen for men, making gender identity potentially less important (see the literature review). The woman working part-time or being unemployed positively influences the amount of domestic work she performs; conversely, the woman's share of domestic work decreases if the man does not work, or works part time or is unemployed. This additional domestic work performed by inactive men, part-time or unemployed, does not suffice to offset the gap in domestic work with the woman: the distribution of work continues to be unequal.

As expected, men's participation in domestic work increases with their level of education. Conversely, the share performed by women falls in line with their level of education. More educated women have greater bargaining power<sup>19</sup>, and more educated men in general have more egalitarian values (Dominguez-Folgueras, 2012).

In 1985-86 and 1998-99, the presence of children in the household significantly increased the share of domestic work performed by women, with an impact of around 2 percentage points. For the year 2009-10, this effect was reversed, as the presence of a child reduced the domestic work performed by women (2 percentage points). This trend reflects men's greater investment in the family, particularly in the care of children.<sup>20</sup> On the other hand, the presence of a child under age 3 did not significantly affect the woman's share of domestic work: the model contains other variables that capture this effect by providing redundant information such as variables relating to working time, since women adjust their working time after they give birth (Pailhé and Solaz, 2010).

Finally, the effect of variables related to marital status on the sexual division of labour within couples changes according to the survey considered. In 1985-86, the share of domestic work performed by cohabiting women was not significantly different from that of married women, while in 1998-99 it was about 3.5 percentage points lower. In 2009-10, the share of domestic work performed by cohabiting women did not differ significantly from that performed by married women, a result that is consistent with the findings of Bianchi et al. (2014), which is based on individual averages. However, all else being equal, the share of domestic work carried out by women in civil partnerships is about 4.5 percentage points lower

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<sup>18</sup> In 1998-99, only one couple was in this configuration.

<sup>19</sup> For the 2009-10 survey, the effect of the woman's education is weaker and less significant than for the other two surveys, but the effect of the "bargaining power" variable, calculated from the relative wages of the two partners, is significant, whereas it is not in 1998-99, and it was not introduced in 1985-86. The two variables "partner's education" and "bargaining power" capture some of the same effect.

<sup>20</sup> Estimates made by separating the activities directly related to children indicate that this negative effect persists.

than married women's share. It is possible that the more equal sharing of tasks within civil partnerships occurs because fathers in these partnerships are more involved than married fathers with their children.

This would not then involve a more equal sharing in relation to gender norms but rather a different relationship to fatherhood. The estimates for activity excluding "child care" indicate that the share of domestic work performed by women in civil partnerships is 5 percentage points lower than that performed by married women.<sup>21</sup> Couples in civil partnerships therefore opt for a more egalitarian distribution of domestic work than married couples, independently of activity directly related to their children.

The data available in the three surveys do not allow taking account of the marital trajectory of the couples (number of unions preceding the one observed, type of past union, duration of the union under observation, etc.), even though this influences the distribution of domestic work within couples. The "Decisions in the couples" module supplementing the 2009-10 time use survey included questions related to the respondents' marital past. The length of the relationship observed can be calculated from the date when the two partners met. However, as civil partnerships were introduced only in 1999, the duration for civil partnerships is necessarily lower than for the other types of couples. Furthermore, among couples who married before 1999, some would have opted for civil partnerships if that option had existed. Information about the number of past unions and the types of past unions is available. Nevertheless, the small size of the sample means that many coefficients have lost their significance. A sample of couples that includes only those who report not having had another union before the current one was retained. The effect of the length of the relationship on the share of domestic work performed by the woman is positive, but not significant. The effect of the civil partnership remains negative and significant at the 10% threshold: taking into account the observed length of the relationship, civil partnership couples are more egalitarian than married couples, whereas cohabiting couples are not. Ten years ago, cohabiting couples were more egalitarian than married couples.

This result could reflect two phenomena. The first is the trend towards a decline in the time women spend on domestic work, which is documented in the literature (section 1). Thus the extent of the sexual division of labour in married couples is reduced and gradually converges with the level observed in cohabiting couples. The second is a shift in values according to marital status, which is related to the introduction of civil partnerships in the late 1990s. Indeed, the recourse to civil partnerships is associated with a system of values that is based on a less differentialist perception of social relations than in decisions to marry (Rault, 2007; Rault and Letrait, 2010). To test this hypothesis, it is necessary to build a counterfactual to estimate what would have been the sexual division of labour of a married couple if this couple had opted for a civil partnership or cohabitation.

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<sup>21</sup> The results are not presented so as to enhance readability.

### 2.3. An estimate using the matching method

This section is intended to clarify the results of the estimate using the OLS method. The choice of marital status is indeed not a random event. Thus, several effects that have already been identified can explain on a non-mutually exclusive basis differences in the division of labour in couples according to marital status:

- ✓ The “observable characteristics” effect refers to the effect of the self-selection of couples in the different types of union based on their observable characteristics. Some socioeconomic characteristics favour a sexual division of labour within the couple, and they can also be associated with a particular type of relationship. It is not then the relationship itself that determines the sexual division of labour, but the particular characteristics of these couples.<sup>22</sup>
- ✓ The “values” effect (non-observable characteristics) refers to the effect of the self-selection of couples based on the values that they hold. Given comparable profiles, couples opt for a form of union because of the values that they share with regard to gender norms in particular<sup>23</sup>.
- ✓ The “marital status” effect refers to the causal effect between the choice of the type of union and the degree of the sexual division of labour within the couple. This effect is undetermined *a priori*.

The OLS estimate cannot be used for the identification of these different effects.

The difference in the sexual division of labour based on marital status obtained by the OLS method can be represented as follows:

$$\underbrace{E(y_{i1}|mar_i = 1) - E(y_{i0}|mar_i = 0)}_{observed} = \underbrace{(E(y_{i1} - y_{i0}|mar_i = 1))}_{marital\ status\ effect} + \underbrace{(E(y_{i0}|mar_i = 1) - E(y_{i0}|mar_i = 0))}_{self-selection\ bias\ (x\ observables+value\ effect)}$$

$y_{ij}$  is the share of the core domestic work performed by the woman in the couple  $i$ . The index  $i$  designates the couple and  $j \in 0,1$  determines the type of couple; 0 for cohabiting or civil partnership couples and 1 for married couples. The variable  $mar$  designates the treatment, in this case the marriage event, which equals 1 if the couple was married and 0 if not.

The matching method is used to associate with each married couple one or more non-married couples who have similar socio-economic characteristics. The basic identification assumption underlying the matching method is based on unconfoundedness conditional independence: if we assume that there exists a vector of observable characteristics  $x_i$  that captures the self-selection bias, thus conditionally on  $x_i$ , then passing through the “marriage” treatment regardless of the type of couples is random:  $y_{i0} \perp mar_i | x_i$

<sup>22</sup> For example, the sexual division of labour within the couple is greater when both partners have a low level of education (see descriptive statistics) and, likewise, less educated couples are more likely to marry, in which case it is not the marriage per se that creates the unequal division of labour, but rather the level of education of the two partners.

<sup>23</sup> Couples with egalitarian values may be more inclined towards civil partnerships, and couples with less egalitarian or more conservative values with respect to the male breadwinner model might more easily opt for marriage, irrespective of their socio-economic characteristics.

This implies that:  $E(y_{i0}|mar_i = 1, x_i) = E(y_{i0}|mar_i = 0, x_i)$

The share of domestic work performed by the woman in married couples is compared with what would have prevailed if these couples were not married. A pairing between married and unmarried couples (cohabiting or in civil partnerships for the 2009-10 survey) starting from the same characteristics would make it possible to build a perfect counterfactual. In practice, this matching is not feasible. The matching problem is reduced to a single dimension; a “propensity score matching” is estimated (Rosenbaum and Rubin, 1983):

$$p(x_i) = \Pr(mar_i = 1|x_i) \in [0,1]$$

This propensity score verifies an important theoretical property: a “Balancing Score”:  $x \perp mar|p(x)$

The conditional distribution of  $x$  knowing  $p(x)$  is orthogonal to the choice of marital status. This property implies that within subgroups of couples who have the same propensity scores  $p(x)$ , the distribution of  $x$  should be identical between the different types of couples, regardless of marital status.

Once conditioned on the propensity score, and given the hypothesis of conditional independence, the independence between the sexual division of labour and the choice of marital status is also satisfied:

$$y_{i0} \perp mar_i|x_i \xrightarrow{\text{implies}} y_{i0} \perp mar_i|p(x_i)$$

The probability of marrying is estimated over all couples. The distributions of this score for the married couples and the cohabiting couples (and civil partnerships for 2009-10) are compared. Only couples with a common support of distributions are retained in the estimates<sup>24</sup>. The matching is then performed between the married and unmarried couples (cohabiting or civil partners) who have identical propensity scores. The results presented below are based on the “Epanechnikov Kernel matching method”: every married couple is paired with all the unmarried couples weighted by their distance in terms of the propensity score<sup>25</sup>. A counterfactual is thus obtained for each married couple:

$$\hat{y}_{i0} = \frac{1}{n_0} \sum_{i'|mar=0} w_{i'} y_{i'}, \quad \forall i \neq i'$$

$$\text{where } w_{i'} = \frac{K((p(x_{i'})-p(x_i)|h))}{\sum_{i'|mar=0} K((p(x_{i'})-p(x_i)|h))} \quad (\text{K: Epanechnikov Kernel})$$

The share of domestic work performed by the woman in each married couple is compared with that of the counterfactual:

<sup>24</sup> The hypothesis of conditional independence is also verified before carrying out the matching process.

<sup>25</sup> Robustness tests based on other methods were also carried out, but are not presented here.

$$\widehat{\Delta}_{\text{marital status effect} + \text{value effect}} = \frac{1}{n_{\text{mar}}} \sum_{i=1}^{n_{\text{mar}}} (y_{i1} - \hat{y}_{i0})$$

Using this procedure, the estimated differences in the distribution of tasks between the different forms of union cannot result from the self-selection of the couples with respect to their observable characteristics. These differences could be interpreted as the result of differences in unobserved characteristics, such as values. The “values” effect would then explain that more egalitarian couples tend to be concentrated in a particular type of union. This method does not take account of the cause-and-effect relationship between the type of union and the degree of the sexual division of labour within the couple. A causal effect of “marital status” on the distribution of domestic work can be inferred only if it is possible to add the “values with respect to equality” dimension in the matching. But the data available do not provide any information on that point. Table 4 shows the results of the matching method and compares these with the results obtained using the OLS method.

| <b>Table 4 : Estimated difference in the share of domestic work performed by the woman based on marital status (stand:</b> |  |                     |                            |                     |                           |
|--|--|---------------------|----------------------------|---------------------|---------------------------|
| Model  |  | Marriage/Cohabiting |                            | Marriage/Cohabiting | Marriage/Civil partners   |
|  |  | 1985-86             | 1998-99                    | 2009-10             |                           |
| <b>LOS</b>   |  | -1.26<br>(0.012)    | <b>-3.48***</b><br>(0.011) | -0.52<br>(0.011)    | <b>-4.54**</b><br>(0.018) |
| <i>Obs. (couples)</i>  |  | 3334<br>3091/243    | 2715<br>2201/514           | 2873<br>2013/683    | 2873<br>2013/178          |
| <b>Matching</b>  |  | -0.2<br>(0.015)     | <b>-5.9**</b><br>(0.019)   | -0.1<br>(0.016)     | <b>-8.6**</b><br>(0.036)  |
| <i>Obs. (couples)</i>  |  | 2913<br>2730/183    | 1802<br>1553/249           | 1907<br>1459/448    | 1644<br>1504/140          |
| Notes: The values are expressed in percentage points.  |  |                     |                            |                     |                           |
| *** significance at threshold of 1%, ** at threshold of 5% and * at threshold of 10%.                                      |  |                     |                            |                     |                           |
| § Standard errors are obtained by bootstrapping for the matching pairs model.  |  |                     |                            |                     |                           |

For the 1985-86 time-use survey, on a sample of 2730 married couples and 183 cohabiting couples, the share of domestic work performed by the woman is not affected by the fact that she is cohabiting. This can be explained by the fact that in the early 1980s, cohabitation was still a marginal practice and resembled a “prelude to marriage” or a “pre-marriage test”. The sexual division of labour preceded the formalization of the union either because the couples anticipated in their organization that they were going to marry, or because once specialization had been established they wound up marrying (Villeneuve-Gokalp, 1990). Thus no significant difference in terms of the sexual division of labour was observed between the two types of union.

For the 1998-99 time-use survey, the sample was reduced to 1802 couples (1553 married and 249 cohabiting) by excluding couples without a common support for the characteristics on which the matching was performed. The result for 1998-99 indicates a significant effect<sup>26</sup>: the domestic work performed by married women would have been 5.9 percentage points lower if these women were cohabiting. This result confirms the result obtained using the OLS method (with which the effect is about 3.5 percentage points). In the late 1990s, cohabitation was spreading as a socially accepted alternative to marriage. Couples were stabilizing their relationship outside marriage, and the arrival of children did not lead them to formalize their union (Toulemon, 1996). The sexual division of labour in these couples is more egalitarian than what occurs in married couples, and this is not due to the particular profile of these couples in terms of their demographics. The “values” effect may explain this gap: cohabitation in the 1990s attracted people who were looking for a type of union that differed from marriage’s conservative norms and reflected egalitarian values. To this could be added a potential “marital status” effect, although the direction of the relationship cannot be clarified: it is possible that marriage reinforces the degree of the sexual division of labour within couples, or that couples who anticipate such specialization opt for this type of union. Barg and Beblo (2012) also found that German married couples are more unequal than cohabiting couples. Panel data from 1991 to 2008 allowed them to identify the direction of causality of the “marital status” effect: German couples were specializing before marriage, but marriage then increased the degree of specialization.

For the 2009-10 time-use survey, the results also confirm those obtained using the OLS method: no significant difference in terms of the sexual division of labour is apparent between married couples and cohabiting couples. Thus, contrary to what was observed for 1998-99, cohabiting couples were not more egalitarian than married couples with respect to the distribution of domestic work. In contrast, in couples in civil partnerships, the share of domestic work performed by the woman was significantly lower (about 8.6 percentage points)<sup>27</sup> than the share observed in married couples, with a sample of 1504 married couples and 140 civil partnerships (the difference is 4.5 percentage points, which is then greater than that obtained by the OLS method). Civil partnerships had become more widespread and now represent an institutionalized type of union, in particular giving a right to joint taxation and offering an alternative to marriage. The division of labour in couples in civil partnerships is less unequal than in cohabiting and married couples. It is possible that these differences are due to a “marital status” effect: couples in civil

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<sup>26</sup> A standard error of 0.019. The standard errors are obtained using bootstrapping.

<sup>27</sup> Standard error of 0.036.

partnerships specialize less than married couples because this form of union is less regulated, or married couples specialize more because of the greater protection associated with marriage. But this “marital status” effect does not explain the case of cohabiting couples, who specialize in the same proportions as married couples, even though this form of union is not regulated. The “values” effect offers a more likely interpretation for the convergence of these two types of couples with regard to the sexual division of labour. Married couples hold conservative values less than before, so that the value effect no longer comes into play between married couples and cohabiting couples, but the division of tasks still remains unequal in these two types of union. Meanwhile, couples holding egalitarian values are, all else being equal, attracted by civil partnerships, whereas before these were institutionalized they opted for cohabitation.

These interpretations merit being refined by using longitudinal data. The duration of the unions is not observed in the data used, nor are any transitions from one type of union to another. Yet a couple’s behaviour with respect to the division of labour is likely to vary according to the duration of the union, the marital past of the partners and also the age when the partners became a couple. The “Decisions in the couples” module can nevertheless be used to take account of the duration of the union observed for 2009-10, with no change in the result.

### **3. Conclusion**

This article complements the literature on the sharing of domestic tasks according to the marital status of couples in the case of France. Cohabitation, which in the 1980s was still seen as a prelude to marriage, has now become widespread as a long-term, socially accepted alternative to marriage. The sexual division of labour has become more equal for married couples, and remained stable for cohabiting couples. In 2009-10, the sexual division of labour in cohabiting couples was similar to that observed in married couples (72% and 73.5%). Couples in civil partnerships were more egalitarian than other couples in the way they organize domestic chores (65.1% of the domestic work is done by the woman).

Econometric estimates indicate that this difference is not the result of the self-selection of the couples in terms of their observable characteristics, but more a “values” effect: the couples opting for civil partnerships hold more egalitarian values than couples opting for the other two forms of union. Once more unequal, today couples in marriages organize themselves along the same lines as cohabiting couples, but on the basis of a distribution that remains unfavourable to women.

The sexual division of labour persists, and has not dissolved with the growth of cohabitation. The French social welfare state has not been overhauled around a new model of the couple, and still lies between the two models. The first centres on marriage, with the patriarchal symbolism that this embodies, and the protections and transfers associated with it. It encourages at least in part a gendered division of roles, and it attracts couples with more conservative values. It is accompanied by safeguards for the wife in case of a separation (compensatory allowance, derivative social rights). The second model is centred on cohabitation, which does not take account of the weight of gender norms and the persistence of the sexual division of labour in the family. The PACS civil partnership, established in 1999, provides only a partial answer in terms of regulation, but to the extent that this form of union attracts couples holding egalitarian values, the consequences in terms of reducing gender inequality are limited. The gap between gendered behaviours in the distribution of domestic work and the choice of marital status poses a risk for cohabiting women, as is suggested by Martin and Théry (2001).

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## 5. Annexes

### Annex 1: Breakdown of activities included in the scope of core domestic work

**Table A1: Nomenclature of the domestic activities**

|                | <b>Kitchen</b>   | <b>Dishes</b>  | <b>Laundry</b>  | <b>Tidying</b>  | <b>Management</b>   |
|----------------|--|--|---|---|---|
| <b>1985-86</b> | 311 - Preparing and cooking food<br>312 - Peeling fruit and vegetables     | 313 - Dishwashing (incl. drying)<br>314 - Putting away dishes (including laying and clearing the table)<br>315 - Serving meals, drinks, coffee, etc. | 331 - Washing clothes (incl. sorting, putting in and out of machine, hanging)<br>332 - Ironing laundry<br>334 - Putting away clothes, sports bags, etc.                     | 321 - House cleaning (sweeping, mopping)<br>322 - Making the beds<br>323 - Tidying a room<br>341 - Outdoor cleaning (sidewalk, rubbish), heavy housework<br>345 - Putting shopping away, loading or unloading the car at home | 343 - Misc. (e.g. doing the accounts, entries, filing paperwork or arranging books)<br>361 - Office and administrative tasks<br>348 - Activities linked to events, i.e. accidents, burglaries, fire, flood, etc.  |
| <b>1999-98</b> | 311 - Preparing and cooking food, peeling<br>314 - Making jam, cakes, etc. | 312 - Dishwashing, putting dishes away<br>313 - Clearing the table, serving the meal   | 331 - Washing clothes (incl. sorting, putting in or out of the washing machine, hanging, folding, etc.)<br>332 - Ironing<br>335 - Putting away clothes, preparing one's bag | 321 - Tidying and storing (incl. putting away shopping): washing, mopping, making / unmaking beds, preparing the linen, tidying a room, etc.<br>322 - Putting away shopping   | 342 - Doing the account, entries, administrative work, including paperwork for the banks, utilities, etc. (incl. any related phone calls)<br>361 - Administrative or office tasks, including waiting on and queueing for administrative tasks<br>369 - Administrative tasks for another household |
| <b>2009-10</b> | 311 - Preparing and cooking food, peeling                                  | 312 - Washing + putting away dishes, clearing the table<br>313 - Setting the table, serving the meal   | 331 - Washing clothes (incl. sorting, putting in or out of the washing machine, hanging)<br>332 - Ironing<br>335 - Putting away clothes, preparing one's bag, luggage       | 322 - Putting away shopping, loading and unloading the car<br>323 - Outdoor tidying and cleaning<br>324 - Indoor tidying and cleaning   | 342 - Household management: doing the accounts, administrative mail<br>361 - Recourse to administrative services (banks, lawyers, administrative tasks such as social security, etc.), excluding job searches   |

|                | <b>Household trips</b>   | <b>Child care</b>  | <b>Care for adults</b>   | <b>Miscellaneous</b>  |
|----------------|--|--|--|---|
| <b>1985-86</b> | 821 – On foot<br>822 – By car (incl. getting to car, finding a parking place, closing and opening it)<br>823 – By motor or push bike<br>824 – On public transport<br>825 - Other | 411 – Nursing and care for infants (up to age 1)<br>412 – Care for older children (from age 1 to about 14)<br>413 – Medical care outside the home (visits to the doctor, dentist, or other healthcare for children outside the home, incl. waiting time)<br>414 – Home health care<br>421 – Monitoring school lessons and homework | 431 – Personal or health care: aiding them to get up, to wash, to eat, to bathe<br>432 – Misc. (packing luggage)   | 342 – Cleaning and supplies for heating and water (incl. lighting fires)<br>347 - Moving<br>344 – Opening and closing shutters, entering or leaving the garage in the car<br>346 – Looking for or doing something in the basement, attic, garage, etc.<br>349 – Chasing out any intruders, ensuring home security |
| <b>1999-98</b> | 813 – Trips for children<br>819 – Trips for another household  | 411 – Child care includes: giving a bottle, changing a child’s clothes, etc. All non-medical care for the children<br>412 – Medical care for children outside the home includes: visits to doctors, dentists, physiotherapists, etc.<br><br>413 – Health care for children at home<br>421 – Monitoring lessons and homework        | 431 – Personal or medical care for adults, including helping them to get up, to wash, to eat, to bathe, etc.<br>441 Other care for family members  | 341 – Maintenance of heating, water (chopping wood, loading coal, lighting fires)<br>343 – Other uncategorized household activities incl. opening and closing shutters, putting the car in or out of the garage, etc.<br>344 – Moving   |
| <b>2009-10</b> | 813 – Trips related to children<br>819 – Trips for another household   | 411 – Taking care of one’s children (excl. health care)<br>412 – Accompanying or waiting for one’s children (excl. trips)<br>413 – Health care at home for one’s children<br>419 – Taking care of another household’s children (incl. accompaniment, health care, hugs, etc.)<br>421 – Monitoring schoolwork                       | 431 – Care for adults in the household: help with personal or physiological activities (toilet, meals, dressing)<br>433 – Other help for an adult in the household<br>439 – Care for adults in another household | 341 -Heating, water (chopping wood, storing coal, lighting fires)<br>343 – Other household maintenance activities<br>344 – Moving house (excl. professionally)  |

## Annex 2: Descriptive statistics of the sample

| Table A2.1 : Marital past of individuals based on the type of union, by survey |                    |            |          |  |                |          |
|--|--------------------|------------|----------|--|----------------|----------|
| Married couples  | Cohabiting couples |            |          |  | Civil partners |          |
| <i>1985-1986 survey</i>  |                    |            |          |  |                |          |
| 3091   | 243                |            |          |  |                |          |
| 93%  | 7%                 |            |          |  |                |          |
|  | Never married      | Divorced   | Widowed  | Married with another person, not living together |                |          |
| Men  | 164<br>74%         | 75<br>31%  | 2<br>1%  | 2<br>1%  |                |          |
| Women  | 163<br>67%         | 69<br>28%  | 7<br>3%  | 4<br>2%  |                |          |
| <i>1998-1999 survey</i>  |                    |            |          |  |                |          |
| 2240   | 521                |            |          |  |                |          |
| 81%  | 19%                |            |          |  |                |          |
|  | Never married      | Divorced   | Widowed  | Married with another person, not living together |                |          |
| Men  | 401<br>77%         | 105<br>20% | 7<br>1%  | 8<br>2%  |                |          |
| Women  | 409<br>79%         | 95<br>18%  | 16<br>3% | 1<br>0%  |                |          |
| <i>2009-2010 survey</i>  |                    |            |          |  |                |          |
| 2014   | 683                |            |          |  | 178            |          |
| 70,05%   | 23,76%             |            |          |  | 6,19%          |          |
|  | Never married      | Divorced   | Widowed  | Married with another person, not living together | Never married  | Divorced |
| Men  | 600<br>88%         | 72<br>11%  | -        | 11<br>2%   | 171<br>96%     | 7<br>4%  |
| Women  | 598<br>88%         | 73<br>11%  | 4<br>1%  | 8<br>1%  | 171<br>96%     | 7<br>4%  |

Source: Time-use surveys, 1985-86, 1998-99, 2009-10, INSEE.

Scope: Cohabiting couples in which the two members have filled out their diaries and at least one of the members is in the workforce.

Note: only a cross-section of the marital status is observed; it is nevertheless possible to have more detailed information about the marital past of couples who are cohabiting or in civil partnerships through individual declarations of legal marital status. Cohabiting couples are defined as those who live together but are not married or civil partners. Cross-checking these couples with the legal marital status reported by the two individuals who make up the couple makes it possible to identify four types of individuals who cohabit: those who have “never married” if they declare their marital status to be “single”; those who are “divorced”; those who are “widowed”; and those who are “married with another person, but not living together”, if they report being married. The same crosschecking of variables is performed for couples in civil partnerships.

| <b>Table A2.2: Characteristics of individuals and households based on the type of union, by survey</b> |                  |                     |                  |                     |                  |                     |                       |
|--|------------------|---------------------|------------------|---------------------|------------------|---------------------|-----------------------|
|  | <b>1985-1998</b> |                     | <b>1998-1999</b> |                     | <b>2009-2010</b> |                     |                       |
|  | <b>Marriage</b>  | <b>Cohabitation</b> | <b>Marriage</b>  | <b>Cohabitation</b> | <b>Marriage</b>  | <b>Cohabitation</b> | <b>Civil prtnrshp</b> |
| <b>Characteristics of members of the couple related to the labour market</b>                           |                  |                     |                  |                     |                  |                     |                       |
| Inactive man   | 1%               | 2%                  | nd               | nd                  | 0%               | 0%                  | 1%                    |
| Inactive woman   | 33%              | 17%                 | 22%              | 12%                 | 13%              | 9%                  | 8%                    |
| Part-time man  | 4%               | 5%                  | 1%               | 2%                  | 2%               | 2%                  | 3%                    |
| Part-time woman  | 14%              | 11%                 | 12%              | 11%                 | 12%              | 12%                 | 11%                   |
| Unemployed man   | 3%               | 8%                  | 4%               | 9%                  | 5%               | 9%                  | 6%                    |
| Unemployed woman   | 3%               | 10%                 | 7%               | 12%                 | 5%               | 8%                  | 3%                    |
| Bargaining power   | nd               | nd                  | -15%             | -9%                 | -10%             | -7%                 | -9%                   |
| <b>Individual characteristics</b>  |                  |                     |                  |                     |                  |                     |                       |
| Man w/o high school  | 75%              | 67%                 | 66%              | 60%                 | 52%              | 57%                 | 31%                   |
| Woman w/o high school  | 74%              | 61%                 | 62%              | 56%                 | 41%              | 42%                 | 20%                   |
| Man w/ high school diploma   | 12%              | 12%                 | 11%              | 13%                 | 9%               | 9%                  | 11%                   |
| Woman w/ high school diploma   | 12%              | 17%                 | 14%              | 13%                 | 14%              | 13%                 | 8%                    |
| Man w/ high school plus  | 13%              | 21%                 | 23%              | 27%                 | 39%              | 34%                 | 58%                   |
| Woman w/ high school plus  | 15%              | 22%                 | 23%              | 31%                 | 46%              | 45%                 | 72%                   |
| Average age of the 2 partners in years   | 38               | 33                  | 41               | 36                  | 42               | 37                  | 34                    |
| Age difference   | 2                | 2                   | 2                | 2                   | 2                | 2                   | 2                     |
| <b>Characteristics of the household</b>  |                  |                     |                  |                     |                  |                     |                       |
| No. of dependent children  | 1,7              | 1,0                 | 1,7              | 1,2                 | 1,7              | 1,3                 | 1,1                   |
| Washing dishes   | 42%              | 25%                 | 63%              | 40%                 | 80%              | 58%                 | 73%                   |
| Washing clothes  | 98%              | 95%                 | 99%              | 97%                 | 100%             | 98%                 | 99%                   |
| Presence of children < 3 yrs   | 23%              | 28%                 | 15%              | 25%                 | 14%              | 20%                 | 34%                   |
| % of couples living in rural area  | 29%              | 18%                 | 30%              | 22%                 | 30%              | 30%                 | 23%                   |
| Total domestic work time performed by the 2 partners (minutes/week)                                    | 343              | 284                 | 306              | 282                 | 291              | 281                 | 299                   |
| Share of domestic work performed by the woman  | 81%              | 75%                 | 82%              | 75%                 | 73%              | 72%                 | 65%                   |
| <b>Total no. of couples</b>  | <b>3091</b>      | <b>243</b>          | <b>2240</b>      | <b>521</b>          | <b>2014</b>      | <b>683</b>          | <b>178</b>            |

### Annex 3: Prediction of hourly wages for women and for men

Equations for hourly wages were estimated<sup>28</sup> for the women and men in the sample used<sup>29</sup>. The estimation of the wage equations takes into account the effect of selection on the labour market using Heckman's method (1979). This simultaneously estimates the equation for the wage and for participation in the labour market. For the calculation of bargaining power, the wages predicted, based on the estimated wage equations, were assigned to individuals for whom the salary was not observed (unemployment or inactivity, or when the pay field was not filled in). The observed wage was used for everyone else.

#### *Results of the estimation of the wage equations and of selection on the labour market*

Wage equation:  $\ln(w_i) = x_{i1}\beta_1 + \varepsilon_{i1}$

$w$  is the hourly wage, the index  $i$  designates the individual and  $x_{i1}$  the vector of the control variables: potential experience and its square, potential experience<sup>30</sup> and its square multiplied by the number of children in the household, and the number of children in the household. These last three variables are used in the estimation of the woman's wage so as to account for career breaks. The diploma obtained (less than high school Bac diploma, high school Bac, above Bac), the type of union (marriage, civil partnerships, cohabitation), and residence in a rural area.  $\beta_1$  is the vector of the corresponding coefficients and  $\varepsilon_{i1}$  is the error term.

Selection equation:  $s_i^* = x_{i2}\beta_2 + \varepsilon_{i2}$

For the selection equation, the latent variable  $s_i^*$  is not observed, it determines the selection (employment) on the labour market, and so we use an observable variable that is defined as follows:  $s_i = 1(s_i^* > 0)$ , or  $1(\cdot)$  is the usual indicator function. Hence the probability of working versus the fact of being unemployed or inactive:  $\Pr(s_i = 1|x_{i2}) = \Pr(s_i^* > 0)$

$x_{i2}$  is the vector of control variables that contains the variables used in the wage equation  $x_{i1}$  + the exclusion variables  $z_i$ : the existence of an unearned income (interest, savings income, dividends). For women, variables are introduced relating to the presence of children under age 3 and age 3 to 6 and the partner's educational diploma.  $\beta_2$  defines the vector of corresponding coefficients and  $\varepsilon_{i2}$  is the error term. The error terms of the two equations  $\varepsilon_1$  and  $\varepsilon_2$  follow a normal joint distribution, with zero mean and a variance-covariance matrix  $\Sigma$ . For identification purposes the variance of  $\varepsilon_2$  is normalized to 1. The reference person is a married woman / man, with less than a Bac diploma, living in an urban area. The results are interpreted in relation to this reference.

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<sup>28</sup> As the objective is to build a variable measuring the woman's bargaining power in the couple, it was essential to predict the wages of the men (even if their actual wage is observed). The estimation of the wage often leads to smoothing and to reducing the wage variance in the sample. Relying on the predicted earnings of the women and the observed earnings of the men would result in an inaccurate measurement of the relative wages of the two partners, and thus of their bargaining power.

<sup>29</sup> The size of the sample is not the same in the wage equations as in the estimation, because of missing data on the dependent variable denoting the share of core domestic work performed by the woman in the couple.

<sup>30</sup> Difference between the age and the age upon completion of studies.

| <b>Table A3 Estimation wage equations for the women and for the men</b> |                      |           |                      |           |
|---|----------------------|-----------|----------------------|-----------|
|   | <b>Women</b>         |           | <b>Men</b>           |           |
|   | Coef.                | Std. dev. | Coef.                | Std. dev. |
| <b>Equation (log) of hourly wage</b>                                    |                      |           |                      |           |
| Prof. experience  | <b>0,023***</b>      | 0,007     | <b>0,023***</b>      | 0,004     |
| Prof. experience <sup>2</sup>   | <b>0,000**</b>       | 0         | <b>0,000***</b>      | 0         |
| Prof. experience x no. of children in household                         | 0,002                | 0,005     |                      |           |
| Prof. experience <sup>2</sup> x no. of children in household            | 0                    | 0         |                      |           |
| No. of children   | <b>-0,075*</b>       | 0,044     | -0,013               | 0,009     |
| High school dip. (ref. less than HSD)                                   | <b>0,119***</b>      | 0,031     | <b>0,233***</b>      | 0,033     |
| High school dip. or more (ref. less than HSD)                           | <b>0,310***</b>      | 0,026     | <b>0,290***</b>      | 0,023     |
| Civil partners (ref: marriage)  | -0,015               | 0,046     | 0,008                | 0,041     |
| Cohabiting (ref: marriage)  | -0,017               | 0,025     | <b>-0,086**</b>      | 0,023     |
| Rural area  | -0,014               | 0,022     | <b>-0,052**</b>      | 0,021     |
| Constant  | 1,725                | 0,067     | <b>1,890***</b>      | 0,051     |
| Total individuals   | 2902                 |           | 2903                 |           |
| <b>Equation of employment</b>   |                      |           |                      |           |
| Prof. experience  | 0,024                | 0,016     | <b>-0,026**</b>      | 0,012     |
| Prof. experience <sup>2</sup>   | <b>-0,001*</b>       | 0         | 0                    | 0         |
| Professional experience x no. of children in the household              | -0,004               | 0,009     |                      |           |
| Prof. experience <sup>2</sup> x no. of children in the household        | 0                    | 0         |                      |           |
| No. of children   | -0,133               | 0,099     | <b>-0,075***</b>     | 0,022     |
| Presence of children aged 3 to 6  | <b>-0,108***</b>     | 0,052     |                      |           |
| Presence of children < 3 yrs  | <b>-0,184***</b>     | 0,063     |                      |           |
| High school dip. (ref. less than HSD)                                   | 0,076                | 0,077     | 0,129                | 0,091     |
| High school diploma or more (ref: less than HSD)                        | <b>-0,197***</b>     | 0,062     | <b>-0,304***</b>     | 0,062     |
| Partner HSD (ref: less than HSD)  | 0,035                | 0,077     | -0,1                 | 0,065     |
| Partner HSD or more (ref : less than HSD)                               | <b>-0,157***</b>     | 0,051     | <b>-0,136***</b>     | 0,053     |
| Civil partners (ref: marriage)  | -0,058               | 0,102     | -0,045               | 0,104     |
| Cohabiting (ref: marriage)  | 0,073                | 0,06      | <b>-0,124***</b>     | 0,06      |
| Rural area  | 0,061                | 0,053     | <b>-0,144***</b>     | 0,053     |
| Non-wage income   | 0,02                 | 0,044     | -0,027               | 0,043     |
| Constant  | 0,457                | 0,151     | 1,21                 | 0,136     |
| Correlation (wage, employment) $\rho$                                   | 0,749                | 0,028     | 0,82                 | 0,019     |
| LR indépendance test of equations ( $\rho=0$ )                          | Chi2(1) = 51,91      |           | Chi2(1) = 94,00      |           |
|   | Prob > Chi2 = 0.0000 |           | Prob > Chi2 = 0.0000 |           |
| Log likelihood  | -2651.497            |           | -2561.409            |           |
| Total non-censored individuals  | 1729                 |           | 2027                 |           |
| *** Significance at threshold of 1%, ** at threshold of 5%              |                      |           |                      |           |

Source: Time-use surveys, 2009-10, INSEE.

Scope: Cohabiting couples in which both members have filled in the diaries and at least one of the partners is in the workforce.