Female-breadwinner couples and union instability in France: a dynamic approach over the life course

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Introduction

Recent decades have seen an increase of couples with women more educated than their partners in the developed world (Esteve et al. 2016; Van Bavel 2012; Bouchet-Valat 2018). Despite gender pay gaps still exist, they are shrinking, and dual earning has become widespread, socially accepted, and promoted as a social investment (Esping-Andersen 2002). Thus, it is no surprising that female-breadwinner couples, i.e. couples in which the woman earns more than her husband, are structurally becoming more and more frequent. In France -the country that we study in this paper– around one prime-earning age couple in four is such that the woman earns more than her partner in 2017 (author's calculation), while it was only one in five 15 years earlier (Morin 2014).

Because female breadwinning challenges gender roles, scholars have theorized that female-breadwinner couples would be more exposed to the risk of union dissolution compared to other couples. Empirical evidence supports such claims (Jalovaara 2003; Kalmijn et al. 2007; Bertrand et al. 2015; Teachman 2010), even if recent work found that the female-breadwinner penalty is less strong among recent marriage cohorts (Schwartz & Gonalons-Pons 2016). Previous research (Oppenheimer 1997; Holland and Vitali 2018) also suggested that the higher risk of union dissolution among female-breadwinner couples might be due to the fact that these couples tend to be poorer than other couples (Kowalewska and Vitali 2019). Virtually all previous studies have investigated the link between partners' relative incomes and divorce focusing on active ages. It is however worth studying union stability at later ages because "grey" divorces are becoming more and more common, and because changes in partners' relative employment and incomes, which are frequent upon retirement, are especially associated with divorce (Van Bavel et al. 2018).

Moreover, as far as we know, no research has investigated this relationship in France –a country where dual earning has been common for decades now, and where one might expect female breadwinning to be more acceptable than in countries where male breadwinning still represents a non-negligible share of couples.

The originality of our paper is twofold. First, we use a unique administrative data source that links together micro-census data, vital event registrations, information on salaries, housing and income tax declarations from 2011 to 2017. Our sample represents 4% of the total French resident population and comprises an unconventionally high number of separations and divorces (more than 100,000). The sample size hence allows us to stratify our analyses by partners' age, income levels, and other employment- and couple-specific characteristics. Furthermore, because our measures of earnings and incomes are based on fiscal records, our data is immune to self-reporting bias typical of survey data where e.g. men tend to overreport and women to underreport their incomes (Zagorsky 2003; Singh et al. 2010). This bias is crucial when studying female breadwinning because partners may lie about their actual earnings so not to be perceived as untraditional (Atkinson et al. 1984). For example, men who report to earn about the same as their partners were shown to actually earn significantly less (Deutsch et al. 2003).

Second, we adopt a life-course approach, by studying a diversity of ages, ranging from 20 to 100+ years, to bring to light unexplored age (and cohort) effects on the risk of union dissolution of female-breadwinner couples.

Research hypotheses

Specialization theories have explained the rise in divorce observed starting from the second half of the 20th century in terms of deviation from a gender division of roles which coincided with women's entrance into the labour force (Parsons 1949; Parsons and Bales 1955; Becker 1991). Similarly, the independence hypothesis has stressed the negative effect of women's incomes on union stability (Oppenheimer 1997). These theories are outdated nowadays, as women's employment is common, widely accepted and frequently necessary for families. Yet, female breadwinners represent a deviation from a long-lived norm where the man is the main or only provider of resources and as such they could thus challenge couple stability in many ways. Historically, female breadwinning couples faced a higher risk of union dissolution (Sayer et al 2011, Bertrand et al. 2015, Killewald 2016, Holland & Vitali 2018). Recent work found that the female-breadwinner penalty would be less strong among recent marriage cohorts in the United States (Schwartz & Gonalons-Pons 2016). As long as the role of women as workers and income providers becomes more and more widespread, the risk of divorce for female-breadwinner couples might be relatively less pronounced. Our first research question is the following: with the spread of female-breadwinner model, **are female-breadwinning couples still more likely to separate?** Using recent data for France, a country where dual earning has been a reality for years now, we wonder whether we still observe that female-breadwinner couples face a higher risk of separation.

Second, the link between woman's and man's incomes and divorce has been previously investigated but mainly in a static way. But partners' relative incomes are not static, they evolve through the life course in response to major life events such as transition from school to work, childbearing, retirement, illness. Partners' relative incomes also change in response to external factors such as unemployment, end of short-term contract and promotion. In this paper we adopt a dynamic approach that considers changes from and into female breadwinning. These changes occur all along the life-course but are much likely at the beginning and the end of working life. Retirement age that does not coincide necessarily for men and women is particularly interesting for our topic. For instance, as woman are on average younger than their partners, men are more likely to retire earlier, and the couple might temporarily become a female breadwinner until the woman also retires. Unlike previous studies that consider mainly active ages, we extend the observation window to include also retirement ages. This is particularly important in a context of increasing "grey divorce". Our second question is the following: **Does the relationship between men and women's relative economic status and marital dissolution change over the life-cycle?**

Lastly, female-breadwinner couples could be defined in various ways, that involves to compare (thus observe) socioeconomic positions of both partners. First, if we consider solely employment, female breadwinners would be women who are employed with a non-employed partner whatever the reason[1]. This situation, which could be long-term (in case of inactivity or retirement) or temporary (in case of unemployment), is challenging for the couple because man could not benefit any more from the social status that job brings. A second approach is to use a strictly monetary definition and compare individual incomes of both partners. This is related to bargaining power of partners. Our third question is the following: **To what extend the relative professional situation and relative income play different roles on separation risk?**

Data, variables and methods

To test these hypotheses we used a recently released administrative database, the French Permanent Demographic Sample 2011-2017, which for 4% of the French resident population links censuses, vital events registrations, housing and income tax declarations. The data set makes it possible to track 1,061,304 couples, either married, in a civil union or in cohabitating and unmarried union aged from 18 and more in 2011. We kept couples for which we are able to observe both individual incomes; therefore the final analytical sample is composed of 1,048,087 couples observed

[1] An alternative definition would be to compare the amount of working hours of each partner (Wood & Marynissen 2019)

7 years on average (*6,485,944* couples-years). We observe both their potential break-up (divorce, civil union break or separation) and income and working transitions. We start in 2011 and we follow people over 6 subsequent years. We consider death, widowhood and emigration as right-censored observations.

Our dependent variable accounts for whether an individual in a coresidential partnership in 2011 breaks his/her union over the 5 subsequent years. We identify this event with a change in the marital status declared in tax returns, or by a change in household composition for the neither married, neither "pacsed"[2] couples, that we call cohabitants hereafter. In the observation window 98,907 divorces, civil union breaks and separations occur.

Our primary independent variable is woman's relative income, i.e. whether it is a male-breadwinner couple, an equal earner couple or a female breadwinner couple.

First, we use the women's share of couple's income. For each partner, income is defined by the sum over the year of all the individual incomes (wage, self-employment income, unemployment, retirement pension) declared in the fiscal return. We use alternatively a three-item or five-item categorizations. The three-item categorization distinguishes couples for which woman earns below 40%, between 40 and 60%, and above 60% of the sum of man's and woman's labour market (or replacement[3]) individual incomes. The five-item categorization further distinguishes "pure" male-breadwinner couples (i.e. the man earns 100% of couple's income) and "pure" female-breadwinner couples (i.e. the woman earns 100% of couple's income).

Second, we use employment status of each partner, measured with the previous year's main source of income, distinguishing between: wage and self-employment, unemployment, no income, and retirement.

Other control variables include: demographic aspects such as couple's average age in 6 ten-year classes, and age difference between partners (i.e. man's age minus woman's age); socioeconomic factors such as quintiles of couple's total income, man's and woman's level of education (categorized as low –below secondary degree, middle –secondary degree, high –above secondary degree- and missing[4]); union characteristics: type (i.e. marriage, civil union or cohabitation); unfortunately, we cannot control for couple duration for cohabitants because we can observe the date of the last conjugal event only for marriage and civil union[5]. We include household composition (i.e. number of minor children), because life-cycle steps may be linked to divorce risk. Finally, we add the town size because urban style is more associated with separation, and the homeownership status as a wealth indicator[6]. All covariates concerning income (level and type), type of union and presence of children in the household are measured one year before the observation of the conjugal status. All monetary values are adjusted for inflation to be comparable from year to year.

Because, we can expect heterogeneous effects of belonging to a female-breadwinner couple on separation risk across crucial variables, we also considered several interactions of our variables of interest with age class, marital status and couple's total income quintiles.

[2] The French Civil Code Act of 15 November 1999, which has since been amended several times, provides the opportunity for unmarried couples to organize their lives together, with some social and tax advantages to both partners. A civil union or PACS (*pacte civil de solidarité*) may be established by a private or notarial act. In the manuscript we use the verb "pacsed" to refer to be people being n PACS, as compared to married or cohabitant people.

[3] Unemployment allowances and retirement pension are included.

[4] Education is more or less recent and precise. It is not available for all years but recovered when individuals are identified by the census, which take place every 5th year (on the whole resident population living in municipalities below 10 000 inhabitants and on 40% of the resident population in bigger cities), from 1 to 6 years before the observation. For EDP-individuals, the information is recovered on 75% of the sample. For the partner however, the education level is missing when he was not yet the partner at a previous census. We decided not to impute the educational level (since missing values could be also linked to recent couple formation) but to introduce a missing dummy indicator.

[5] As a robustness check, we also run models for married couples and couples in a civil union only, including or not a variable on union duration distinguishing between 4 categories (up to 4 years, 5 to 9 years, more than 10 years or unknown duration) to evaluate whether the omission may change results.

[6] Homeownership is measured at the couple's level; it is therefore not possible to know if the two partners own an equal or different share of the family home.

Being female breadwinner: a dynamic concept

Figure 1 shows the distribution of couples by man's age according to each partner's employment status, distinguishing the equal couples (in which both are active or both are inactive), the male-breadwinner couples (in which the man is active on the labour market and the woman is inactive), and the female-breadwinner couples (in which the woman is active while the man is not). The dual earner model (in purple) is massive in France, followed by the male-breadwinner model, while the female-breadwinner model remains a residual instance. However, we can notice that they are more frequent around the retirement age and at the beginning of working life.

Figure 2 shows the same distribution by using the relative income definition. Female breadwinner is much more frequent when the man has just retired or not yet employed (i.e. for very young couples). Figure 2 could let one think that types of couples are static over the life-course with the exception theses specific periods. However, it is not the case. Figure 3 considers the changes in types of couples over the life-course: the percentage of couples who become female breadwinner and those who are not female breadwinner anymore. Each year, some couples change of categories: some become female breadwinner (in solid lines in the graph). It concerns around **2% of the couples yearly** if we consider the employment status definition, and around **5 % if we consider the earnings definition**. We observe many more changes at the beginning and end of the working period. For instance, when men reach 60, many of them retire -and they are thus not belonging to a dual-earner couple anymore- or they earn less than their active female partner. We also observe couples who are not female breadwinner anymore (in dotted lines). In this case, we observe peaks some years later than for the previous transition that is when the women retire in turn. The phenomenon is amplified by the age gap between partners, with the man being on average 2 years than older than the woman.

Henceforth, female breadwinning is a dynamic concept, which needs to be analysed by means of dynamic variables.

Figure 1 Types of couples by age: Relative employment status definition

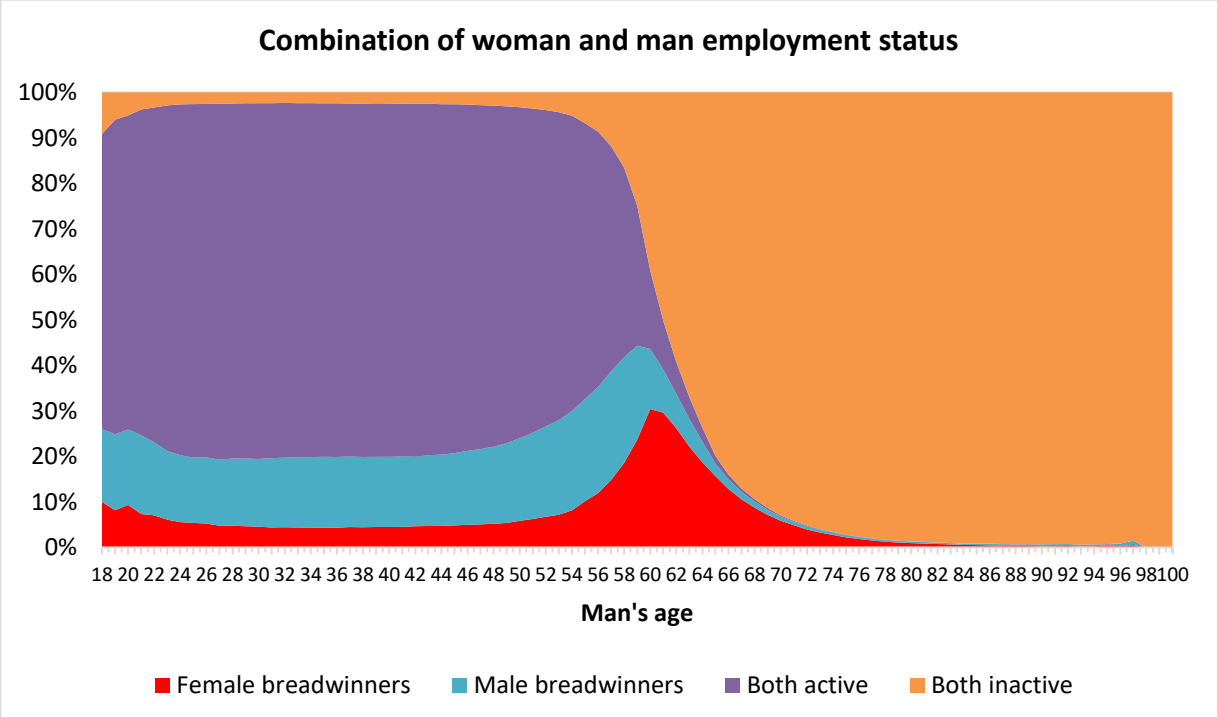


Figure 2 Types of couples by age: Relative income definition

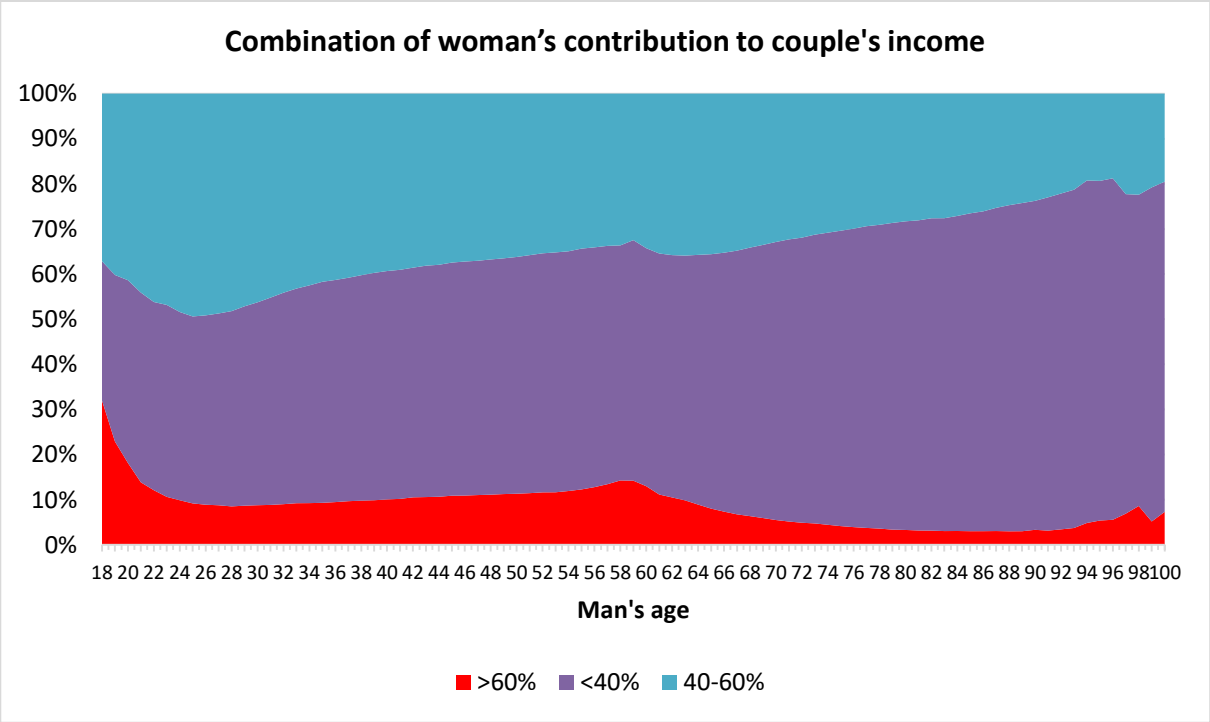
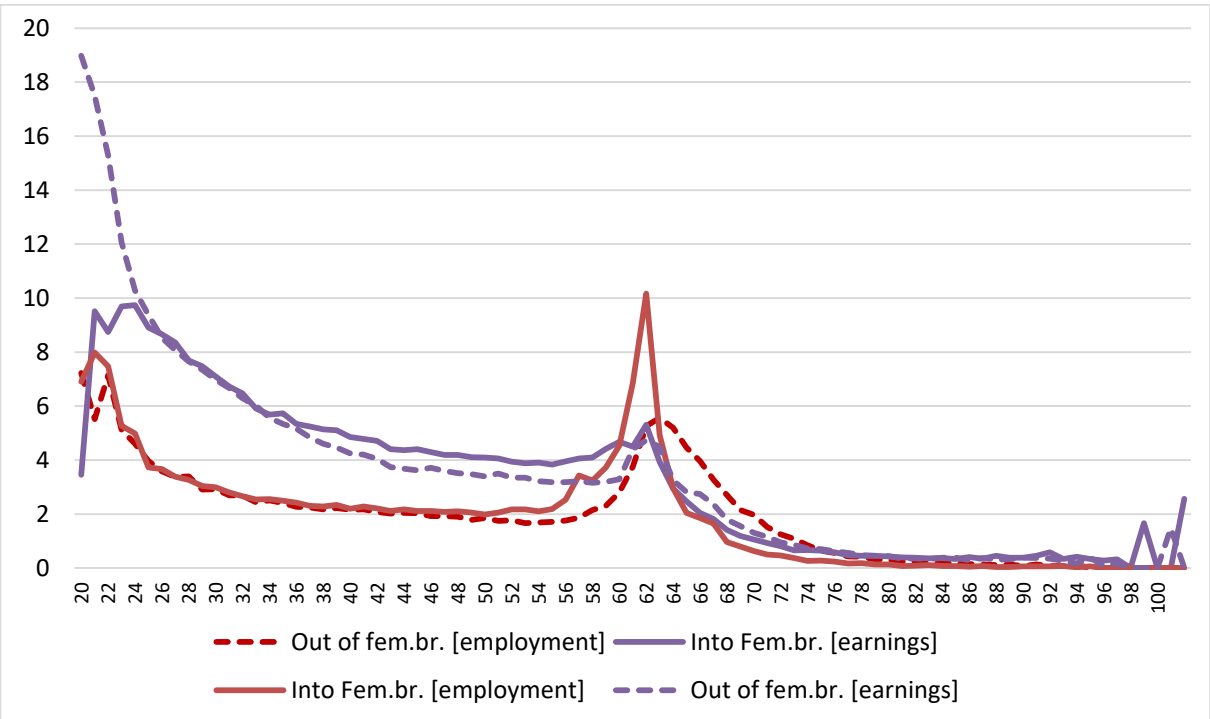


Figure 3 Percentage of people moving into and out of female-breadwinner couples, by age and according the two definitions used



Results

Univariate

Our sample represents all coresident couples, either married, in a registered partnership or cohabitants in France. More than half of the sample (54%) is composed of couples in which the wife earns less than 40% of the total couple's income (Table 1 in the Appendix).

The distribution of female-breadwinner couples and its relative risk of union dissolution are also very interesting (Figure 4). In a quarter of these partnerships (13% of the total), the wife does not earn any income. In about one third of the sample the two partners have almost the same income (between 40 and 60% of the total), while in less than one out of ten couples the woman's relative income is above 60% of the total. Looking at the frequency of dissolutions according to this decomposition, we observe a slightly different pattern, as separation is more frequent among couples in which the woman earns more than the man.

Figure 4 Sample distribution according to women's share of couple's income and relative risk of union dissolution

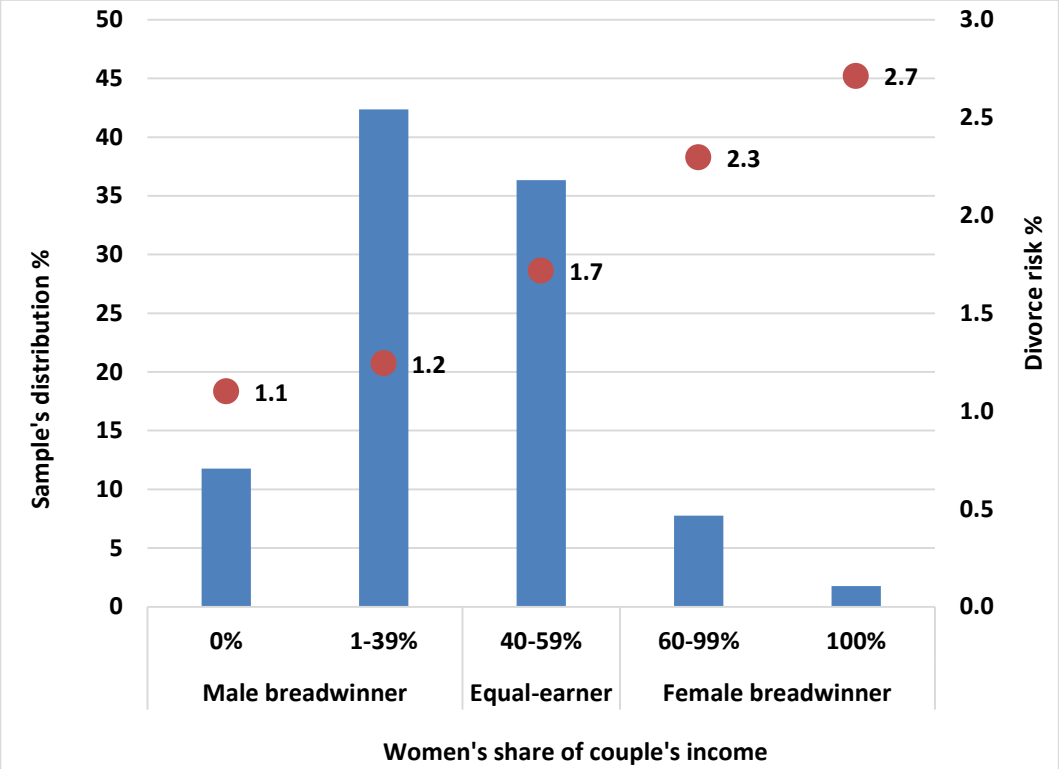


Table 1 Annual average dissolution rate according to partners' employment status

		Women			
		Wage & self-employment	Unemployed & no income	Retirement	*Total*
Men	Wage & self-employment	2.1	1.9	1.2	*2.1*
	Unemployed & no income	**3.2**	2.7	1.6	*2.9*
	Retirement	0.9	0.4	0.2	*0.3*
	Total	*2.1*	*1.6*	*0.3*	*1.5*

Table 1 shows yearly average dissolution rates according to the combination of partner's employment status. When the man is not working (i.e. he's unemployed or already retired), the higher risk of dissolution is observed when the woman is working (Table 1, first column).

If we define the breadwinner couples by the relative employment status, the results thus converge. The highest dissolution risk is observed for the couple with an unemployed man and an active woman. But the accumulation of precarious situations (both unemployed) presents also a higher risk. When the man is retired and the woman is still working, dissolution risk is lower, maybe because of an age effect (dissolution decreases with age). However, it remains the highest risk observed for the couples with a retired man.

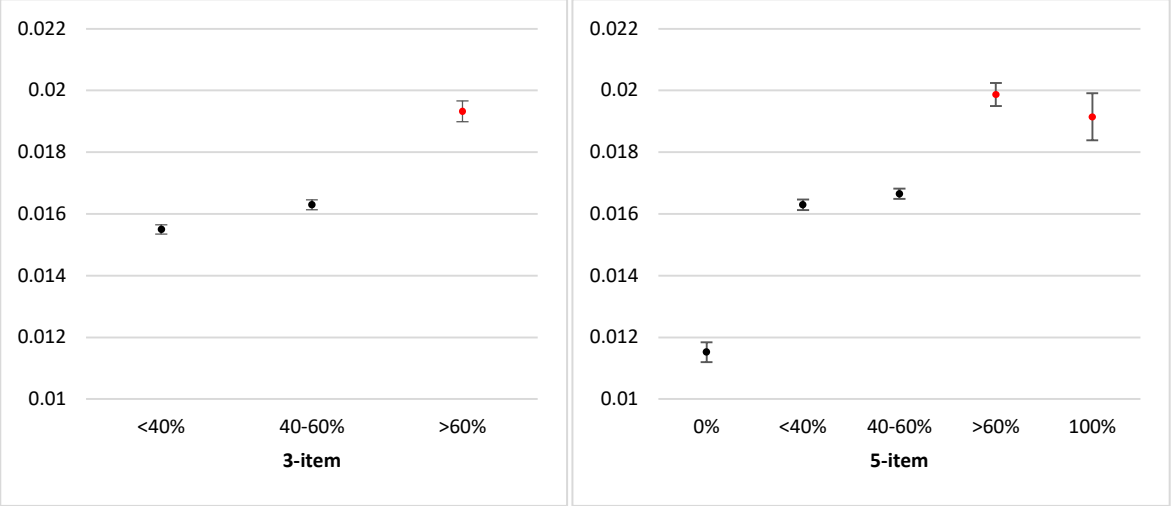
Thus, whatever the definition (income or employment status), female-breadwinner situation is a source of couple instability, and it adds to the other well-known determinants of partnership dissolution, such as unemployment or young age.

Multivariate

The positive relationship between woman's share of couple's income and union dissolution is confirmed by the multivariate analysis that accounts for several important control variables (Figure 5). The result about income share remains. All other things being equal, couples in which the woman's share of total income is higher than 60% are significantly more unstable than equal earners' couples and male breadwinner ones. This is confirmed when we isolate the extreme situation (when one of the partner has no income at all). A traditional division of work (i.e. when the woman is out of the labour force) is associated with more stability; we observe a medium risk of dissolution at the middle of the distribution, and a higher risk when the woman earns more.

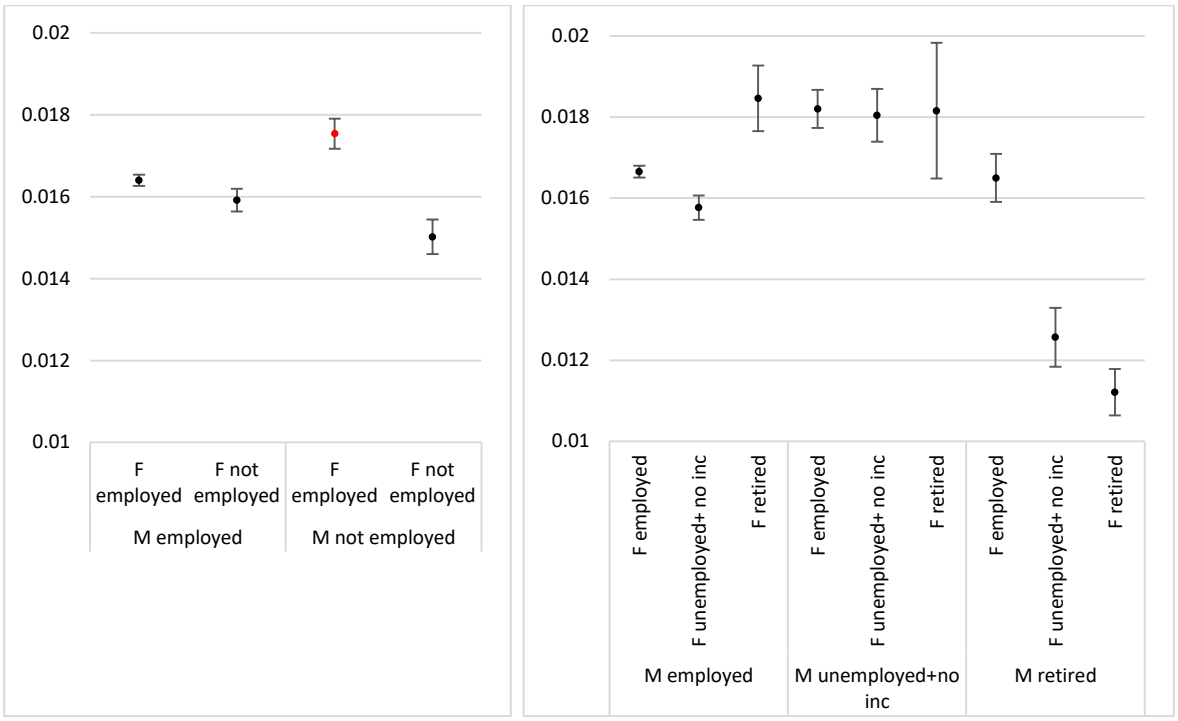
In a model that controls both for age and income configurations (not shown here), the probability of dissolution significantly increases as women's share of total income increases, whatever the level of detail we are looking at (i.e. even when we distinguish the "pure" female and the "pure" male breadwinners).

Figure 5 Predicted probability to divorce according to woman's share of couple income, logit models, relative income definition



Accounting for the second definition of female-breadwinner couples (as shown in Figure 6) confirms their higher risk of dissolution: when the man is retired, the divorce risk is lower but remains the highest if the woman is still employed (i.e. the breadwinner situation). Further, when the man is unemployed or has no income the risk of dissolution is higher than when he is employed, whatever her status.

Figure 6 Predicted probability of union dissolution according to woman's share of couple income, logit models, relative employment status definition



Effects of other covariates are also interesting and are in line with previous findings on divorce. Dissolution risk is the highest at 40-49 years, then it decreases with couple's mean age, and increases with increasing age gap. We also observe a small SES gradient and a small U-shaped effect of income quintile. Dissolution risk decreases for women with higher education, while it does not significantly differ according to man's education. It more likely occurs to cohabiting and "pacsed" couples as compared to married. It decreases in presence of children in the household. It is lower for people owning their home as compared to renters and, unexpectedly, is lower in the Parisian area and the big French cities as compared the smaller towns and rural areas.

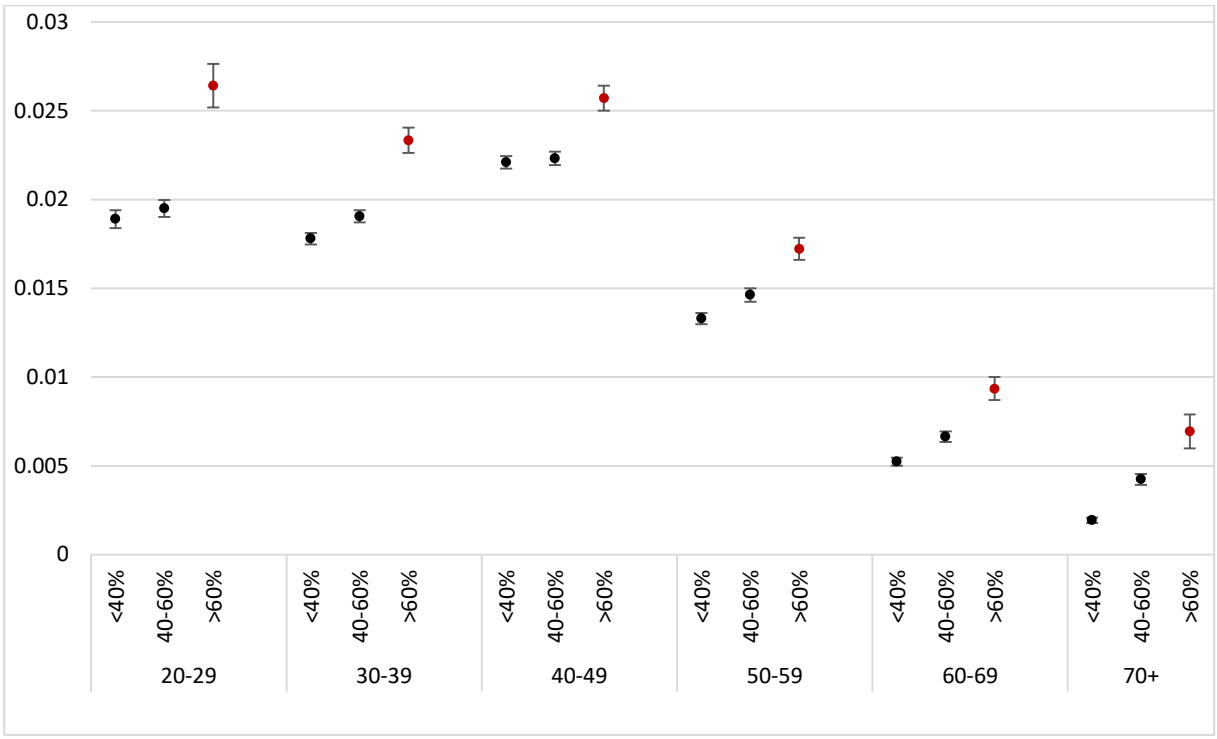
Heterogeneous effect by age

However, these results may hide important changes occurred over the last decades in the acceptance of previously nonstandard couples in which the woman outearns the man. Indeed, in order to capture a possible heterogeneous effect, we interact our variable of interest with several covariates.

Figure 7 shows the predicted probabilities of union dissolution according to the interacting factor between age class (mean of both partners age) and breadwinning type of couples. First, we can observe that the highest risk is observed for women outearning men aged 40 to 49, while it sharply decreases from age 50. Second, we can observe that for every observed age class, the probability of partnership dissolution increases as woman's share of couple income increases. The separation-promoting effect of female-breadwinner couples is observed at every age.

Interestingly, male-breadwinner couples are not protecting against union dissolution for younger partners, while there are still protective for older couples.

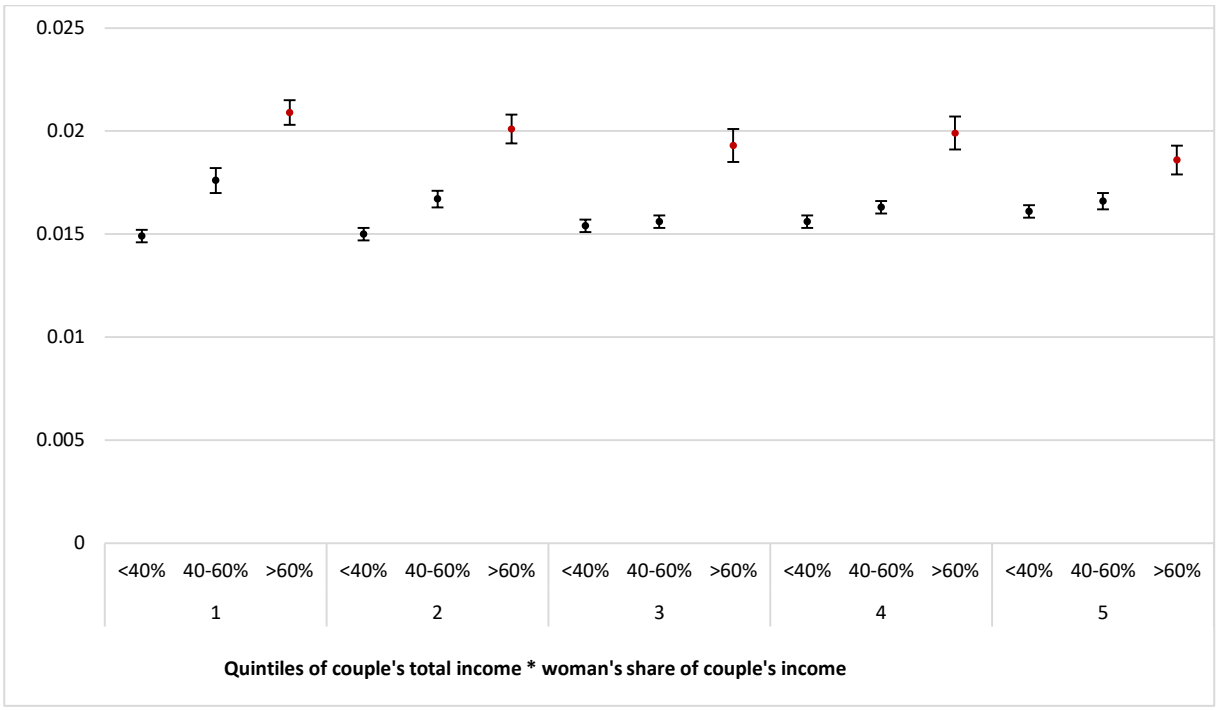
Figure 7 Predicted probability of union dissolution according to woman's share of couple income and age class, logit models



Heterogeneous effect by household quintile of income

Moreover, we tested whether the female-breadwinner penalty was observed all along the income distribution (Figure 8), and it is effectively the case. But we can notice that the gradient is more pronounced (i.e. absolute income gap is larger) at the bottom of the income distribution.

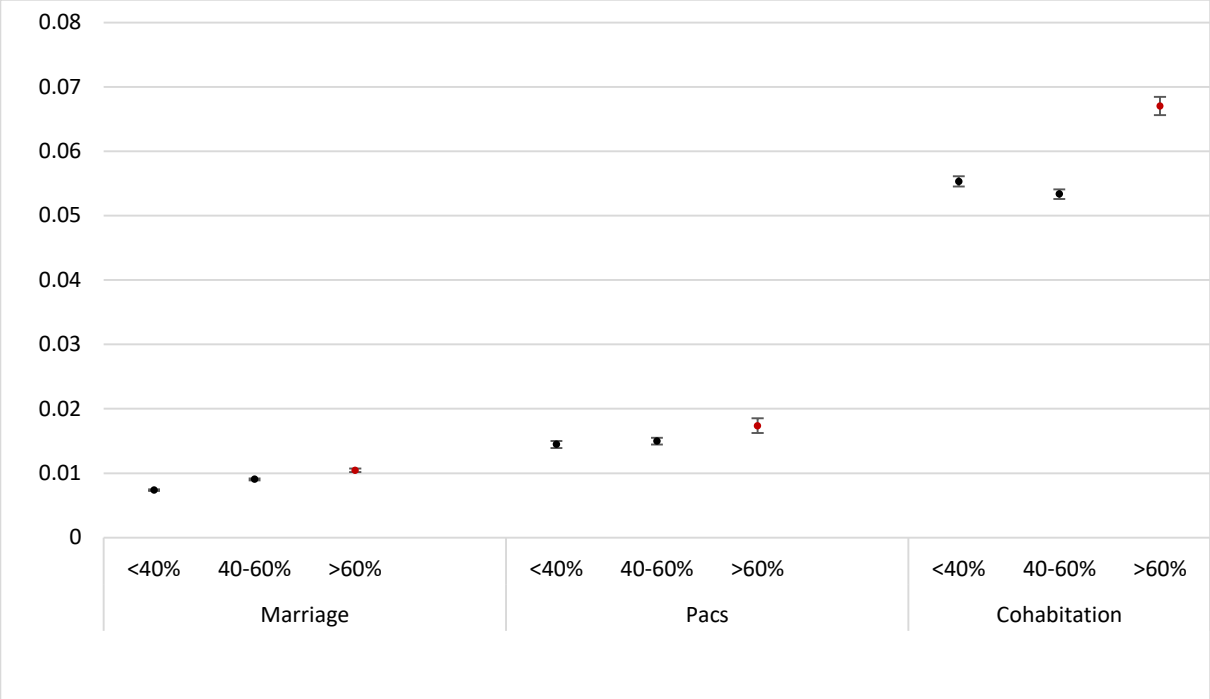
Figure 8 Predicted probability of union dissolution according to woman's share of couple income and union type, logit models



Heterogeneous effect by marital status

Finally, we observe a consistent higher dissolution risk for cohabiting or pacsed couples than for married couples. Although we expected the female-breadwinner penalty for couple stability to be less salient for unmarried couples (which are on average more egalitarian), evidence shows that the effect is observed for every type of couples.

Figure 9 Predicted probability of union dissolution according to woman's share of couple income and union type, logit models



Conclusion

Our results for France confirm previous findings for other countries that female-breadwinner couples have a higher risk of union dissolution than other couples. Our results hold for various definitions of female breadwinning based on partners' relative incomes or employment status; Results also hold across various marital arrangements (marriage, non-marital cohabitation, pacs) and across age groups. We do not find any sign of a fading effect among the younger cohorts, as suggested by previous research and contrary to our own expectations. We do find, instead, a sign of a fading effect across the income distribution: the association between female breadwinning and risk of union dissolution is higher at the bottom of the income distribution.

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Appendix

Table 2 column percentage distribution of used variables, average over the 7-years observation window (monetary definition)

	All couples	MBW	Equal	FBW
Total	100	54.2	36.3	9.5
Mean age class				
20-29	5.6	4.5	7.0	5.0
30-39	19.0	17.2	21.4	19.1
40-49	22.4	21.3	22.9	26.3
50-59	21.1	20.7	20.2	29.0
60-69	18.2	19.5	17.6	15.4
70+	13.7	16.9	10.8	5.2
Age difference (M-W) *mean*	2.4	2.5	2.2	2.4
Union Type				
Marriage	82.8	87.4	77.5	76.8
Pacs	5.2	4.0	6.7	6.0
Cohabitation	12.0	8.6	15.8	17.2
Presence of children	54.1	53.2	55.5	58.9
Men's education				
Low	43.5	42.7	45.2	42.3
Medium	11.7	11.2	12.5	12.2
High	19.1	20.4	18.1	16.9
Missing	25.7	25.8	24.3	28.6
Women's education				
Low	40.0	45.7	35.3	25.9
Medium	13.3	12.3	14.7	13.9

High	21.9	16.9	26.7	32.5
Missing	24.9	25.1	23.3	27.7
Town size				
Rural	27.0	25.6	29.2	27.2
2-20k inh.	19.2	19.5	19.4	16.8
20-200k inh.	18.8	19.5	17.8	18.3
200k-2m	21.9	22.7	20.7	21.1
Paris area	13.1	12.6	13.0	16.6
Born abroad	12.6	14.4	9.4	15.3
Home ownership status				
Owner	76.9	77.0	79.3	72.7
Social renter	8.5	9.2	7.0	9.6
Private renter	14.6	13.8	13.7	17.7
Quintiles of total income				
1st	20.0	23.4	10.0	26.3
2nd	20.0	22.9	16.3	18.6
3rd	20.0	16.5	26.9	16.8
4th	20.0	16.1	27.4	17.9
5th	20.0	21.1	19.4	20.4
Person-years	*6,485,944*	*3,512,030*	*2,363,807*	*610,107*