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Educational Differentials in the Impact of Micro- and Macro-Level Economic Conditions on Union Formation in France (1993-2008)

In France, where unemployment is high, it is often difficult for young people to find a stable job after completing their education. This was already the case before the recent economic crisis. In parallel, age at first union formation is increasing. How do young people's labour market difficulties affect their decision to enter a first cohabiting relationship? Are differences observed by sex and level of education? Using longitudinal data from the French version of the GGS survey (Étude des relations familiales et intergénérationnelles, ERFI), Jorik VERGAUWEN, Karel NEELS and Jonas WOOD examine the effects of young people's individual educational and occupational trajectories from age 16 and of macro-level economic conditions on the timing of first union. They show that these factors do play a role, and that their impact differs by gender and educational level.

A substantial body of literature has addressed the association between micro-level employment status and aggregate-level economic conditions on the one hand, and fertility patterns on the other. Although union formation has repeatedly been suggested as one of the main pathways through which adverse economic conditions affect family formation, the impact of individual- and aggregate-level (un)employment on union formation has received less attention (De Lange et al., 2014; Neels et al., 2013; Sobotka et al., 2011). Using longitudinal micro-data from the Generations and Gender Survey (GGS), in tandem with contextual data on economic conditions, this paper addresses how variation in both individual-level labour market positions and aggregate-level economic conditions affected entry into a first co-residential union among French men and women between 1993 and 2008.

Most research on the association between economic conditions and union formation has focused on the importance of individual-level labour market

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characteristics (such as income and employment) (Kalmijn, 2011), without differentiating these effects by level of education. Our study contributes to this literature in two ways. First, we consider whether the association between both aggregate- and individual-level economic conditions and union formation varies by level of education. On the one hand, compared to low-educated individuals, highly educated groups have more favourable employment and income prospects and feel more job secure (Anderson and Pontusson, 2007). Furthermore, those with higher qualifications have been found to crowd out low-qualified individuals in the competition for lower-skilled jobs during economic adversity (Pollmann-Schult, 2005). In the event of unemployment or macro-economic adversity, this suggests that highly educated individuals are less restricted by unfavourable employment prospects in relation to partnership formation. On the other hand, as highly educated individuals generally follow occupational trajectories where early career investments yield higher returns in later career stages (Liefbroer and Corijn, 1999), unemployment, over-qualification or employment uncertainty may lead to postponement of union formation until a stable labour market position is established. Lower educated individuals, in contrast, have less favourable income and employment prospects. They are often disproportionately disadvantaged in periods of economic hardship, being more frequently employed in recession-sensitive sectors, and may have to compete with more qualified individuals to fill vacancies for lower-skilled work. Although labour market insecurities may delay union formation regardless of level of education, it has been suggested that particularly low-educated individuals may revert to union and family formation in a context of limited employment opportunities to reduce uncertainty (Friedman et al., 1994).

Second, we examine whether the association between education, economic conditions and entry into a first co-residential union differs by sex. Whereas the employment position of men is important in both male-breadwinner and dual-earner households, the importance of women's employment is more likely to depend on their relative income position in the household. Particularly low-educated women are more likely to have secondary income positions in a couple, making their employment position less decisive with respect to cohabitation or marriage. Among highly educated women, increasing employment and earnings may, on the one hand, encourage union formation to facilitate cost-sharing when setting up an independent household (Jalovaara, 2012); on the other hand, female employment may promote singlehood, as financial independence allows women to postpone partnership formation until an appropriate partner is found (Dykstra and Poortman, 2010).

I. Theoretical background and hypotheses

In this section we first consider patterns of union formation and the economic situation of French young adults. Subsequently, the literature on macro-level economic conditions, individual-level labour market positions and union formation is summarized, with a specific focus on heterogeneity in these associations in terms of gender and education.

1. The French context

First union formation in France

France witnessed a sharp decrease in marriage rates from the early 1970s onwards, similar to trends found in many other northern and western European countries (Prioux, 2005). This trend is related to the delay of union formation and the rise of unmarried cohabitation as a first union type. Prioux (2003) shows that the mean age of entering a first partnership in cohorts born between the late 1950s and early 1970s rose by 1.4 years (from 22.5 to 23.9 years for women and from 24.6 to 26.0 years among men). The French GGS data (own calculations) indicate that the period mean age at female first union was 22.1 years in the early 1980s and increased to 23.2 years in the 1995-1999 period. In addition, the share of couples starting their union in unmarried cohabitation increased from 10% to 90% over this period (Toulemon, 1997). From a European perspective, and in line with the findings of Heuveline and Timberlake (2004), cohabitation in France is long-lasting and marriage following cohabitation has become less prevalent. The French GGS data (own calculations) show that the percentage of women (age 15-49) marrying within five years of entry into their first cohabitation has declined from 50% among women who entered their union in 1985-1994 to 44% among those who entered their first union in 1995-1999.

France is a forerunner with respect to non-marital childbearing (Klüsener et al., 2013). Compared to other European countries, cohabitation has developed into an acceptable setting for childbearing. The majority of French parents still marry at some point before or after having a child, however, suggesting that marriage has not been eschewed altogether, but that the order of transitions has become more flexible. Perelli-Harris et al. (2012) find that 90% of the French mothers who had their first child in the period 1995-2005 started their union in unmarried cohabitation, while only 47% of the mothers were still unmarried at the first birth.

The economic situation of young adults

Entry into the labour market is often difficult for young adults in France (Boulhol, 2013; Boulhol and Sicari, 2012; Wolbers, 2007). This has been related to a variety of factors, including the general character of skills acquired in

education – which are often not sufficiently tailored to specific labour market requirements – and the rigidity of the French labour market (e.g. a high degree of employment protection) (Boulhol, 2013; Brzinsky-Fay, 2007; Quintini and Martin, 2006). In addition, a relatively high proportion of young adults leave school without basic qualifications (Batard et al., 2012). While 89% of 15-19 years olds were enrolled in education in 1995, placing France at the forefront of Europe,⁽¹⁾ this proportion had decreased to 84% by 2008 (OECD, 2011). This is a cause for concern since only 29% of 15-19 year olds not in education in 2010 were employed (the other 71% being unemployed or out of the labour force) (OECD, 2012).

Difficult labour market entry has been associated with high unemployment rates in younger age groups (Boulhol and Sicari, 2012; Germe et al., 2003; Rouaud and Joseph, 2014). Throughout the 1990s and early 2000s, unemployment at ages 15-39 in France hovered between 11.2% and 15.9%. Among the EU-15 countries, only Mediterranean countries showed higher rates (Eurostat, 2014a). Unemployment in France is also strongly differentiated by gender and educational level (Eurostat, 2014a). Unemployment is consistently higher among less educated workers. A persisting gender gap is also observed, with higher unemployment among women. Nonetheless, French women preferably work in a full-time job, with only a minority of women opting for a family role (Kieffer et al., 2005).

Despite higher rates of unemployment in younger age groups, the age of leaving the parental home is relatively low, with a median age of around 23 years during the late 1990s and 2000s. From a European perspective, only the Nordic countries show younger ages (Iacovou, 2002; Iacovou and Skew, 2010). Given their difficult entry into the labour market, young adults in France frequently receive parental support, as young school-leavers are not entitled to unemployment benefits until they have a certain work experience and are not entitled to minimum welfare before age 25 (Dormont and Dufour-Kippelen, 2000; Galland and Meron, 1996; Pailhé and Solaz, 2012).

2. Micro-level economic conditions and partnership formation

Poor employment prospects prevent young adults from becoming economically independent (Bell et al., 2007). Although some limited welfare state provisions exist (e.g. housing allowances), the income of young adults is strongly related to their labour market position. As a source of income is required to set up an independent household, employment is expected to encourage union formation (Kalmijn, 2011). In line with Oppenheimer's uncertainty hypothesis (1988, 1997), a difficult career entry is expected to delay union formation, regardless of income level. Unstable occupational trajectories, characterized by non-employment, irregular or temporary

(1) Although school is compulsory up to the age of 16 in France, the standard age groups used in OECD publications are reported here.

employment, cause uncertainty about one's ability to provide sufficient financial resources in the future. In addition, as work structures people's lives, the future lifestyle of individuals with unstable occupational trajectories is uncertain, making it difficult for them to anticipate what a partnership will be like (Kalmijn, 2011). Some authors have argued, however, that the importance of employment as a prerequisite to union formation is greater for marriage than for entry into unmarried cohabitation (Jalovaara, 2012; Kalmijn, 2011), which has become the dominant first union type in France. Cherlin (2004) argues that the normative expectations regarding economic independence and material living standards are substantially higher for marriage. In contrast, cohabitation is deemed more compatible with (temporary) economic uncertainty because of lower financial and material prerequisites, while offering some of the benefits of marriage such as economies of scale (Oppenheimer, 2003). In line with the uncertainty hypothesis, several studies have also found strong negative associations between non- or irregular employment and partnership formation in France (Ekert-Jaffé and Solaz, 2002; Kalmijn, 2011). The concept of uncertainty may equally apply to students, given their income position and their uncertainty about their future working career. As a result, most studies show that full-time enrolment in education is incompatible with setting up an independent household in France (Prioux, 2003; Robert-Bobée and Mazuy, 2003; Robette, 2010). In sum, we expect individual employment to promote entry into a co-residential union as a result of the uncertainty reduction and higher incomes associated with employment. Unfortunately, we cannot distinguish between uncertainty reduction and income effects empirically in the remainder of this article as the GGS does not provide longitudinal data on income levels or quality of employment (e.g. duration of contract).

Previous research has shown that the association between employment status and partnership formation differs by gender. It is often argued that the differential role of employment results from the gender-based division of labour, particularly in male-breadwinner households (Becker, 1981; Thomson and Bernhardt, 2010). As a result, most studies assume that *men's labour market position is more important than women's employment with respect to union formation* (Hypothesis 1a). With respect to female labour market positions, previous studies for France suggest an important distinction between female unemployment and female inactivity. Whereas both positions imply financial limitations, unemployment (i.e. not having paid work but looking for a job) has been identified as a particularly inhibiting factor with respect to union formation. In contrast, being out of the labour force has been found to enhance women's likelihood of partnering since before their first union, most inactive women deliberately choose not to work (Ekert-Jaffé and Solaz, 2001, 2002). In this case, voluntary inactivity corresponds to a traditional division of labour in a couple (Ekert-Jaffé and Solaz, 2002).

Female labour force participation has increased steadily in France over the last 50 years. Between 1990 and 2008 the ratio of women to men in the labour force (ages 15-64) further increased from 0.71 to 0.82 (ILO, 2012). In a context of rising gender symmetry in labour force activity, women's economic resources may have increasingly facilitated union formation by easing the financial burden of partnering for men (Bracher and Santow, 1998; Jalovaara, 2012; Oppenheimer, 1988). An empirical study on France suggests that the effects of men and women's labour market position on union formation converged between 1955 and 1998 (Winkler-Dworak and Toulemon, 2007). In line with this body of empirical evidence, we hypothesize that *female employment has become an important prerequisite for entry into a co-residential union, particularly in couples where women have a considerable earning potential* (Hypothesis 1b).

3. Macro-level economic conditions and partnership formation

Studies addressing the relation between macro-level economic conditions and partnership formation in France are scarce. Vergauwen and Neels (2013) find a negative association between unemployment rate and first union formation between 1970 and 2004, particularly for men. Similarly, Prioux (2003) shows that youth unemployment has a considerable impact on the timing of union formation in France (1975-1998). These findings suggest that union formation is postponed as a result of increasing unemployment and deteriorating job characteristics during periods of economic hardship, when young adults are more frequently obliged to accept temporary employment and underemployment. Especially in France, the prevalence of short-term employment is high (Pailhé and Solaz, 2012). Adverse economic conditions are also expected to depress wages and limit opportunities for career advancement. In addition, using data from the Family Survey Dutch Population (FSDP), De Lange et al. (2014) find for the Netherlands (1970-2000) that the negative association between a higher unemployment rate and first union formation persists when controlling for variation in individual employment characteristics (individual unemployment and duration of employment contract). In line with this result, a number of studies have provided empirical support for a strong association between aggregate unemployment and perceived job insecurity at the individual level (Anderson and Pontusson, 2007; Erlinghagen, 2008), suggesting that economic prospects become more uncertain under adverse economic conditions. Even among employees with stable and permanent employment, feelings of uncertainty concerning one's own or a potential partner's economic prospects may give rise to delayed entry into a co-residential union (Harknett and Kuperberg, 2011; Xie et al., 2003). In sum, we expect that *adverse macro-economic conditions induce postponement of union formation* (Hypothesis 2), possibly due to deteriorating individual labour market positions, but also to increasing uncertainty regarding employment prospects.

4. The differential impact of economic conditions by education

The above hypotheses consider the associations between entry into a first co-residential union and variation in both individual-level labour market positions (Hypotheses 1a-1b) and aggregate-level economic conditions (Hypothesis 2). We also examine how these associations vary by educational level as economic uncertainties may be perceived differently by these groups. Liefbroer and Corijn (1999) suggest that young adults with a tertiary education generally follow long-term career tracks where earnings increase gradually as work experience is accumulated. Adverse economic conditions may temporarily frustrate anticipated trajectories and entail postponement of union formation until becoming sufficiently established in the labour market. Although highly educated individuals often succeed in bridging adverse economic conditions by taking up work for which they are overqualified (Francesconi and Golsch, 2005; Pollmann-Schult, 2005), being overeducated relative to job requirements has been shown to have a harmful effect on long-term career development (Verhaest and Van der Velden, 2012). Overeducated workers not only have lower wages, but also receive less formal training and report less job satisfaction (Hartog, 2000; Verhaest and Omeij, 2009). For those with tertiary education, union formation is therefore expected to be negatively related to adverse economic conditions and employment instability of both men and women, as gender symmetry is valued and both partners are expected to contribute financially to the household (Bolzendahl and Myers, 2004).

School-leavers without a tertiary education are considered as a vulnerable group with unfavourable labour market prospects (Fondeur and Minni, 2004; Verick, 2009). We expect partnership formation to be related differently to economic conditions among this group, for whom it may provide an alternative path to reduce uncertainty in life goals (Friedman et al., 1994). In particular, unmarried cohabitation, the most prevalent type of first union, may be considered more frequently as a low-cost solution and therefore acceptable in periods of uncertainty (Clarkberg, 1999; Mills and Blossfeld, 2005; Oppenheimer, 1988). In the group with lower education, women are expected to have a secondary earning position in the couple more frequently, and therefore be less likely to adopt egalitarian attitudes with respect to paid work (Glass, 1992; Kane and Sanchez, 1994). As a result, lower educated women may be more likely to invest in the family sphere in periods of economic hardship. For the non-tertiary educated group, we expect union formation to be less affected by adverse economic conditions and employment positions, particularly for women. In sum, this leads to the hypothesis that *the negative association between adverse (individual- and aggregate-level) economic conditions and first union formation is stronger among the tertiary educated* (Hypothesis 3).

II. Data and methods

Testing the research hypotheses requires longitudinal micro-data on both union formation and employment, complemented with contextual information on economic conditions. The analyses use retrospective union histories from the first (1993-2005) and second (2005-2008) waves of the French Generations and Gender Survey (GGS).⁽²⁾ Employment histories were drawn from the second wave of the GGS.

1. Model specifications and dependent variable

The partnership and employment histories⁽³⁾ of men and women (aged 16-39) who had never entered a co-residential union are observed between 1993 and 2008.⁽⁴⁾ The data file includes information for 1,914 individuals born between 1954 and 1987. Respondents are followed on a monthly basis until their first union (a direct marriage or a cohabitation lasting for at least three months) (1,420 events), or until censoring at age 39 or at the month of the interview (494 censored). Table 1 shows that only a small group of respondents married directly (91 individuals or less than 7% of all first unions), whereas 1,329 first unions were identified as unmarried cohabitations. Pre-arrival experience of first generation immigrants has been excluded as union formation and immigration may be linked (Bracher and Santow, 1998).

Multilevel discrete-time event history models are estimated using a logit link function to study the odds of entering a first union versus staying “at risk” (i.e. never having entered a co-residential union). Separate models are estimated for men and women. Since unobserved individual time-constant characteristics are potentially correlated with the independent variables in the model, not accounting for this unobserved heterogeneity may lead to biased parameter estimates. Hence, all models include a normally distributed random frailty term at the individual level (Mills, 2011). In other words, person-months (63,592 among men and 81,309 among women) are nested in persons (804

(2) Analyses assessing the validity of demographic data in the first GGS wave indicate that retrospectively calculated first marriage rates approximate vital statistics quite well for the period 1990-2005 (Vergauwen et al., 2015). Additional bias may result from errors in reporting the start of unmarried unions (Hayford and Morgan, 2008), but the validity of retrospective data on cohabitation could not be assessed given the lack of vital registration data.

(3) For the construction of the dependent variable (first entry into a co-residential union) and some of the time-varying covariates (parental home living status and employment status), information on the months of event occurrences are used. As information is missing for some of these month variables (i.e. only the year or the season of event occurrence are reported), random imputation was applied to avoid excluding these cases.

(4) As unmarried cohabitation became the dominant mode of entry into first union from the early 1990s (about 90% of first unions being cohabitations), we restricted the scope of the analyses to this period. This avoids complex modelling strategies that distinguish between types of union and facilitates the extrapolation of our results to recent years. Also, the detailed information on aggregate unemployment is only available from 1993.

men and 1,110 women). The reported random-intercept variance (i.e. residual variance) reflects the variance between individuals that is not accounted for by the covariates included in the model (e.g. due to personality traits, perceived attractiveness, etc.).⁽⁵⁾

2. Independent variables

Table 1 presents the distribution of person-months at risk between age 16 and first entry into a co-residential union or censoring for both the time-constant and time-varying covariates. For the time-constant characteristics, Table 1 additionally includes the distribution of observed individuals. Age, living at the parental home and calendar time are included as control variables.

Age

In the sample, men at risk of entering their first co-residential union are 23.4 years old on average, whereas the average age for women at risk is 22.5 years. All models include a cubic specification of age (time-varying) as the baseline hazard function. For each sex, the age variable of the model is centred and reduced (mean of 0 and standard deviation of 1).

Calendar time

A variable reflecting calendar year is included as a control variable. Consistent with developments in other European countries, an ongoing postponement of entry into a first union or marriage has been reported in France (Prioux, 2003). An interaction between calendar year and the quadratic age specification therefore controls for unobserved factors related to postponement of union formation (for example, changing norms on age at union formation).

Parental home living status

A time-varying dummy variable is included to indicate whether respondents are living with their parents. The descriptives in Table 1 show that the share of person-months spent cohabiting with parents is somewhat higher among women than among men (56.8% versus 54.3% respectively), reflecting the fact that women enter a co-residential union more quickly than men after leaving the parental home. Previous studies indicate that the co-residence of adult children with their parents is often related to economic need (e.g. non-employment) (Isengard and Szydlik, 2012).

The main independent variables of interest are educational attainment, individual-level employment status and aggregate-level unemployment rate.

(5) Likelihood ratio tests indicated that introducing an individual-level random-intercept significantly improved model fit (at the 5% level) for women, but not for men (at the 10% level).

Table 1. Distribution of person-months at risk between age 16 and first entry into a co-residential union (% person-months) and distribution of individuals ever at risk of entering a co-residential union (% individuals), women and men aged 16-39, France, 1993-2008

	Person-months exposure (% of person-months)		Individuals ever at risk (% of individuals)	
	Men	Women	Men	Women
Birth cohort (time-constant)				
1954-1959	1.9	1.9	4.5	3.6
1960-1969	16.7	12.0	19.7	12.8
1970-1979	55.0	49.8	50.0	46.7
1980-1987	26.4	36.4	25.9	36.9
Age^(a, b) (time-varying)				
16-21	45.7	55.1		
22-27	31.6	26.6		
28-33	15.2	11.5		
34-39	7.5	6.8		
Mean (St. dev.)	23.4 (5.7)	22.5 (5.6)		
Educational attainment (time-constant)				
Non-tertiary	57.7	41.6	60.3	46.1
Tertiary	42.4	58.4	39.7	53.9
Calendar time (year) (time-varying)				
1993-1996	35.0	30.6		
1997-2000	29.1	28.0		
2001-2004	21.9	26.0		
2005-2008	14.0	15.3		
Living at parental home (time-varying)				
Yes	54.3	56.8		
No	45.7	43.2		
Employment status (time-varying)				
Student	40.6	55.3		
Employed	52.8	39.5		
Unemployed	4.1	3.2		
Out of the labour force	0.5	1.3		
Other inactivity	2.1	0.8		
Unemployment rate^(a) (time-varying)				
Mean (St. Dev.)	7.7 (2.6)	9.3 (3.5)		
Total N	63,592	81,309	804	1,110
N censored			213	281
N of cohabitations			558	771
N of direct marriages			33	58
(a) The mean and standard deviation are presented for continuous variables.				
(b) A cubic age specification (age, age ² , age ³) is used as the baseline hazard function.				
<i>Source:</i> French GGS Wave 1 and 2, authors' calculations.				

Educational attainment

The highest educational level recorded in GGS Wave 2 is included as a time-constant covariate in the analysis.⁽⁶⁾ Based on the ISCED-classification (1997), two levels of education are distinguished:⁽⁷⁾ non-tertiary education (ISCED-levels 0-4 or post-secondary education at most) and tertiary education (ISCED-levels 5-6 or any type of tertiary education, i.e. holders of at least “*diplômes professionnels divers*”). The distribution of the education variable shows that women in the sample attain a higher level of education than men, with 53.9% of women having a tertiary degree compared to 39.7% of men. All models include an interaction between education and age (linear) as the timing of leaving education is expected to differ by level of education.⁽⁸⁾ This is in line with findings by Skirbekk and colleagues (2004) which suggest that event timings (such as marriage) are clustered in terms of social age – time since leaving education – because of social interactions and peer-group influences of fellow school cohort members.

Employment status

The available time-varying information on employment status was collapsed into a categorical variable distinguishing five states: i) student, ii) employed (including self-employment, military service, working as a family member in a family business, or being on parental or maternity leave), iii) unemployed (looking for a job), iv) out of the labour force (not looking for a job) and v) other inactivity (ill, disabled or retired). Additional analyses testing various lags of employment status find the strongest associations between current employment status (i.e. unlagged) and partnership formation. We observe that the majority of person-months are spent in employment and as a student. Men spend 40.6% of person-months between age 16 and first union in education, and 52.8% in employment. Among women, a higher proportion of person-months is spent in education (55.3%), and a lower proportion in employment (39.5%). For men, 4.1% of person-months are spent in unemployment, versus 3.2% among women. Whereas men spend comparatively smaller proportions of time out of the labour force (0.5%), women more often leave the labour market to stay at home (1.3%). Finally, 2.1% of male person-months are in other types of

(6) A time-varying variable reflecting both the respondent's enrolment status and highest level of education attained at the moment of observation is strongly correlated with the time-varying indicator of employment status. Therefore, education is constant for the entire observation period and represents the qualification obtained by students when they finish school. For 7.8% of the respondents information on their highest level of education is missing. Additional robustness checks were performed for all models with entry into the risk set at leaving education instead of age 16, which yielded similar results.

(7) Due to a low number of respondents with the lowest educational level (i.e. ISCED levels 0-2), we included educational attainment as a variable with two categories.

(8) Interaction terms were tested between education on the one hand and age, age square and age cubic on the other. Only the interaction with age yielded a significant improvement in model fit.

inactivity, compared to 0.8% of female person-months. Further, an interaction term between education and employment status is included to examine differential effects of employment status on union formation by level of education. To test this interaction, employment status was collapsed into a categorical variable distinguishing only three states: student, employed and not employed.⁽⁹⁾

Unemployment rate

Macro-level unemployment rates have frequently been used as indicators of economic context in research on union and family formation. A review of the literature indicates that unemployment and consumer confidence reflect the effect of economic recession on family formation more closely than general indicators such as GDP or inflation rate (Sobotka et al., 2011). As a result, individual-level data from the GGS are complemented with gender-specific time-series of monthly unemployment rates (ages 15-39, 1993-2008) drawn from Eurostat (2014b). These gender-specific time-series are re-scaled using education-specific annual unemployment rates (i.e. relative differences in the annual unemployment rate between educational levels are applied to the monthly rates) (Eurostat, 2014a; 2014c). For each observed month, a gender- and education-specific unemployment rate is used in models 3-4. This allows us to adequately consider the association between partnership behaviour of individuals and the economic conditions in their labour market segment. To simplify the interpretation of results, unemployment rates were centred at the average gender-specific level (8.7% for men and 9.8% for women) for the period 1993-2008. To examine whether the association between aggregate unemployment and the odds of entering a co-residential union varies by education, interactions between unemployment rate and educational attainment were tested.

III. Results

Tables 2 and 3 report the exponentiated coefficients for the event history models of entry into a first union, allowing for an interpretation in terms of odds ratios (OR). Although the tables show the full regression model results, our discussion will focus primarily on the regression coefficients for the covariates of interest. Models 1 and 2 estimate the coefficients for individual employment status, whereas Models 3 and 4 show how macro-level unemployment is related to the entry into a first union, net of individual-level employment status.

(9) The category “not employed” includes respondents who are unemployed, out of the labour force or otherwise inactive. Problems of model convergence required collapsing activity status into fewer categories, given the low numbers of person-months in some categories.

1. Results for the micro-level covariates (Models 1 and 2)

Model 1 shows that for men, the likelihood of entering a first union differs by employment status (Table 2). Being employed is positively associated with entry into a first partnership. Compared to employed men (reference category), the likelihood of entering a first union is significantly lower for both unemployed

Table 2. Odds ratios (OR) for entering a first union among never-partnered singles (Models 1-2), men and women aged 16-39, France, 1993-2008

	Model 1				Model 2			
	Men		Women		Men		Women	
Micro-level covariates								
Constant	0.01	***	0.02	***	0.01	***	0.02	***
Age (baseline hazard function)								
Age	1.31	-	0.92	-	1.30	-	0.90	-
Age square	0.37	***	0.31	***	0.37	***	0.32	***
Age cubic	1.29	***	1.34	***	1.29	***	1.33	***
Education								
Non-tertiary	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>
Tertiary	0.86	-	0.89	-	0.87	-	0.91	-
Tertiary*age	1.28	**	1.75	***	1.31	**	1.76	***
Calendar time								
Year	1.08	*	1.04	-	1.08	*	1.04	-
Year*age	0.99	-	1.00	-	0.99	-	0.99	-
Year*age square	1.00	-	1.00	-	1.00	-	1.00	-
Living at parental home								
Home living	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>
Single living	1.76	***	1.35	***	1.75	***	1.38	***
Employment status								
Employed	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>
Student	0.48	***	0.41	***	0.45	***	0.41	***
Not employed ^(a)					0.51	***	1.46	**
Unemployed	0.46	***	0.97	-				
Out of the labour force	0.49	-	2.80	***				
Other inactivity	0.34	***	0.77	-				
Tertiary education*employment status								
Employed					1	<i>Ref.</i>	1	<i>Ref.</i>
Student					1.11	-	1.02	-
Not employed					0.52	-	0.57	*
Model parameters								
Between-subject variance	0.48	-	0.63	**	0.46	-	0.56	**
N person-months	63,592		81,309		63,592		81,309	
Deviance (-2LL)	6,357.66		8,748.27		6,356.09		8,759.74	
Degrees of freedom	15		15		15		15	
AIC	6,387.66		8,778.27		6,389.09		8,789.74	
(a) The not employed category encompasses unemployment, out of the labour force and other inactivity (Model 2). Significance levels: - not significant, * p < 0.100, ** p < 0.050, *** p < 0.010. Source: French GGS Wave 1 and 2, authors' calculations.								

men (OR = 0.46) and men enrolled in education (OR = 0.48). Probably due to the low number of men out of the labour force, the negative association with entry into a first union is not statistically significant ($p > 0.10$). The likelihood of starting a first union is lowest, however, for men who are otherwise inactive (OR = 0.34). The between-subject variance (reflecting the variance between men unaccounted for by the model) is estimated to be 0.48, which is not statistically significant at the 10% level.

For women, we find that the regression outcomes for employment status differ substantially from the results found for men (Model 1). A delaying effect is only observed among students, for whom the likelihood of entering a first union is significantly lower (OR = 0.41) than for employed women. For unemployed women (OR = 0.97) and other inactive women (OR = 0.77) the likelihood of entering a first co-residential union does not differ significantly with respect to employed women ($p > 0.10$). Women who are out of the labour force, in contrast, are nearly three times more likely to form a partnership (OR = 2.80) than women who are employed. The estimated between-subject variance (0.63) is statistically significant at the 5% level, indicating that unobserved differences between women affect the likelihood of entering a co-residential union. In sum, we observe that while female educational enrolment delays union formation, this is not the case for other forms of individual non-employment. Female individual unemployment has no effect, while the likelihood of entering a co-residential union is highest for women who are out of the labour market (e.g. homemaker), but not otherwise inactive (possibly because of a limited number of observations in this category). The results of Model 1 for men and women hence confirm Hypothesis 1a, suggesting that employment remains an important condition for union formation, among men particularly.

To verify whether the association between employment status and union formation differs by educational level, interaction terms between both variables are introduced in Model 2. To test the interaction, unemployment, being out of the labour force and other inactivity are collapsed into a single category (i.e. being not employed). The regression coefficients for employment status in Model 2 (Table 2) reflect the effect of employment status among individuals not having tertiary education. The parameter estimates for the interaction between education and employment status reflect how the effect of employment status differs between individuals with tertiary and non-tertiary education.⁽¹⁰⁾ For men without tertiary education, the results show that the likelihood of entering a co-residential union is substantially lower among those who are not employed (OR = 0.51) compared to those in employment. Although the results suggest that the negative effect of non-employment on the likelihood of entering a union is more pronounced among tertiary educated men (OR = $0.51 \times 0.52 = 0.27$), this differential effect is not significant ($p > 0.10$). Also, the negative association

(10) In other words, the regression coefficients present the differential effects.

between enrolment in education and the likelihood of entering a co-residential union shows limited variation by level of education, so this is also the case for employed men.⁽¹¹⁾ The likelihood of partnership formation is lower for students and men who are not employed, showing little variation by level of education.

For women, the odds ratios of Model 2 show that not being employed lowers the likelihood of entering a first union only among the tertiary educated group (OR = $1.46 \times 0.57 = 0.83$). This differential effect is statistically significant at the 10% level. In contrast, the association between non-employment and union formation is positive among non-tertiary educated women (OR = 1.46). Regarding student status, differences between educational levels remain limited and statistically insignificant ($p > 0.10$). Finally, for employed women the odds of entering a co-residential union are similar across educational levels.⁽¹²⁾

Overall, the analysis points out that, for women, the positive association between entry into a first union and employment is only found among those with tertiary education. For men, not being employed reduces the likelihood of entering a co-residential union regardless of educational level. Our results thus partially support Hypothesis 3 that non-employment has a strong postponement effect on first union formation among those with higher education. For both men and women the between-subject variation is reduced in Model 2. Whereas the between-subject variance is no longer significant among men, it remains so for women ($p < 0.050$).

2. Results for the macro-level covariate and cross-level interactions (Models 3 and 4)

Models 3 and 4 (Table 3) additionally introduce macro-level unemployment rates. Model 3 indicates that variation in the aggregate-level unemployment rate is not significantly ($p > 0.10$) related to the likelihood of entering a first union for either men or women (Table 3). Our findings thus provide little support for a negative association between macro-economic adversity and the transition to a first partnership, controlling for individual-level employment status (Hypothesis 2). A sensitivity analysis was carried out to test whether the outcomes differ by gender. A pooled model including both men and women shows that the odds ratio for women (OR = 1.02) significantly differs (at the 10% level) from the odds ratio found for men (OR = 0.96).⁽¹³⁾

(11) The main effect of education in Model 2 shows that the likelihood of entering a co-residential union is substantially lower at age 16 for tertiary educated than for non-tertiary educated men, whereas the positive interaction between education and age indicates that the differential diminishes at older ages. A model without the interaction between age and education, estimating the average educational differential between ages 16 and 39 in the likelihood of entering a union, shows an odds ratio of only 0.97 ($p > 0.10$).

(12) A model without the interaction between age and education, estimating the average educational differential at ages 16-39 in the likelihood of entering a union, shows an odds ratio of only 1.11 ($p > 0.10$).

(13) In the pooled model all control variables are interacted with gender to ensure comparability with the separate models by gender.

Table 3. Odds ratios (OR) for entering a first union among never-partnered singles (Models 3-4), men and women aged 16-39, France, 1993-2008

	Model 3				Model 4			
	Men		Women		Men		Women	
Micro-level covariates								
Constant	0.01	***	0.02	***	0.01	***	0.02	***
Age (baseline hazard function)								
Age	1.31	-	0.93	-	1.34	***	0.93	-
Age square	0.37	***	0.31	***	0.37	***	0.31	***
Age cubic	1.29	***	1.34	***	1.30	***	1.34	***
Education								
Non-tertiary	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>
Tertiary	0.77	*	1.00	-	0.48	***	0.99	-
Tertiary*age	1.28	*	1.76	***	1.26	*	1.76	***
Calendar time								
Year	1.07	-	1.05	-	1.07	-	1.05	-
Year*age	0.99	-	1.00	-	0.99	-	1.00	-
Year*age square	1.00	-	1.00	-	1.00	-	1.00	-
Living at parental home								
Home living	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>
Single living	1.78	***	1.35	***	1.76	***	1.35	***
Employment status								
Employed	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>	1	<i>Ref.</i>
Student	0.47	***	0.41	***	0.48	***	0.41	***
Unemployed	0.47	***	0.97	-	0.47	***	0.97	-
Out of the labour force	0.49	-	2.78	***	0.51	-	2.77	***
Other inactivity	0.35	**	0.77	-	0.35	**	0.77	-
Tertiary education*employment status								
Employed								
Student								
Not employed								
Macro-level covariates								
Unemployment rate (UR)	0.96	-	1.02	-	0.97	-	1.02	-
Tertiary education*UR					0.84	**	1.00	-
Model parameters								
Between-subject variance	0.51	-	0.65	**	0.50	-	0.65	**
N person-months	63,592		81,309		63,592		81,309	
Deviance (-2LL)	6,355.22		8,747.67		6,350.78		8,747.67	
Degrees of freedom (Df)	16		16		17		17	
AIC	6,387.22		8,779.67		6,384.78		8,781.67	
<i>Significance levels:</i> - not significant, * p < 0.100, ** p < 0.050, *** p < 0.010.								
<i>Source:</i> French GGS Wave 1 and 2, authors' calculations.								

Model 4 additionally includes interactions between the macro-level unemployment rate and education. For both men and women, the main effect for the unemployment rate in Model 4 reflects the effect of variation in the unemployment rate on the likelihood of entering a first union among individuals

with non-tertiary education. The interaction term reflects how the effect differs among tertiary educated individuals. For men, including the interaction term significantly improves the model fit ($p < 0.05$ with $\Delta-2LL = 4.44$ and $\Delta df = 1$). The difference between men with non-tertiary and tertiary education is significant at the 5% level and also substantial in terms of coefficient size. For the first group, the odds ratio indicates a weak negative association ($OR = 0.97$), while a one percentage point increase in the unemployment rate implies a 19% decline in the odds of entering a first union among men with tertiary education ($OR = 0.97 \times 0.84 = 0.81$). The results hence suggest that the negative association between macro-level unemployment rate and union formation is particularly pronounced among tertiary educated men. The effect size is substantial, as unemployment in France increased by two percentage points for all educational levels in the early 2000s. According to the results of Model 4, this increase in unemployment lowers the odds of entering a co-residential union by 38% for men with tertiary education, compared to a decrease of only 6% among men with non-tertiary education. For women, including the interaction term between unemployment rate and education does not significantly improve the model fit ($p > 0.10$ with $\Delta-2LL = 0.00$ and $\Delta df = 1$), indicating that the estimated interaction is not significant. In sum, our findings suggest that the negative association between adverse macro-level economic conditions and the likelihood of entering a first union is particularly pronounced among highly educated men (Hypothesis 3), whereas no effect is found among women, whatever their level of education.

IV. Discussion

In this section we discuss the results with respect to individual employment status and partnership formation (Hypotheses 1a and 1b) and compare them with similar studies which did not take into account this heterogeneity. They suggest that the effects of employment status vary by educational level. Our findings support the hypothesis that partnership formation is more strongly related to the individual-level employment status of men than is the case among women (Hypothesis 1a). For men, employment is an important prerequisite for entering a first co-residential union. Both enrolment in education and non-employment significantly reduce the likelihood of entering a first union. The models that did not incorporate the interaction between employment and education suggest that female employment is less important for entry into a first union, notwithstanding rising gender symmetry in the division of labour in French households (Winkler-Dworak and Toulemon, 2007). In contrast to findings by Ekert-Jaffé and Solaz (2002) in the 1990s, the likelihood for unemployed women of entering a first co-residential union was found to be comparable to that of employed women. In line with the aforementioned study, however, the results differ for women who are out of the labour force (excluding

disabled or retired women) since inactive women are the most likely to form a partnership. The results suggest that the male-breadwinner model of partnership formation has not disappeared altogether. This may also result from the fact that men enter partnerships at older ages, and hence have more stable employment positions than their female partners. Alternatively, it could be that the date of co-residence is planned in advance and thus anticipated over a longer time period. When women leave the labour force as a preparatory step towards living in a partnership, the direction of causality is reversed as the decision to form a partnership leads to labour force withdrawal. The evidence for such anticipatory effects seems limited, however. Models testing different lags for individual-level employment status (up to six months) suggest a stable and strong positive association for women between being out of the labour force and the likelihood of entering a first union. The results demonstrate that the use of current employment status yields the strongest relation with entry into a first union. In this respect, our findings are different from research carried out for Finland (Jalovaara, 2012). Although the latter study focuses on a more narrow selection of birth cohorts (1969-1981), the results for Finland show a similar association between employment status and first partnership entry for men and women, suggesting more gender-egalitarian roles in general. Similarly, a European study shows that the role of employment in union formation is more similar for men and women in more gender-egalitarian settings (Kalmijn, 2011).

With respect to macro-level conditions, we find partial support for a negative association between aggregate unemployment and union formation (Hypothesis 2), controlling for individual employment status, but only in the case of men. This result is consistent with other studies on France that have linked indicators on macro-economic context to union formation (Ekert-Jaffé and Solaz 2001; Vergauwen and Neels, 2013). One explanation for this gender difference is related to different age schedules of partnership formation. As men partner at older ages and are less sensitive to the business cycle at these ages (Verick, 2009), their younger partners may feel less uncertain about forming a union during a period of economic adversity. For Ekert-Jaffé and Solaz (2001), however, this finding is related to high unemployment among French women. Given their lower employment chances regardless of the business cycle, women may be less affected by changes in macro-economic context. Also, women are frequently employed in service and public sectors which are less sensitive to changes in economic conditions, implying less variation in the female unemployment rate (Verick, 2009).

This article makes an original contribution to the literature by considering educational differentials in the association between economic conditions and first union formation. The results indicate that our conclusions on Hypotheses 1a and 1b should be nuanced as the effects of individual employment and aggregate unemployment vary across educational levels. We find that not being employed

reduces the likelihood of entering a first union primarily among those with higher education (Hypothesis 3). This differential effect of individual employment is significant for women but not for men. Employment is found to be more important for highly educated women than for women with non-tertiary education, for whom union formation, particularly in case of unmarried cohabitation, may provide an inexpensive means to reduce uncertainty when labour market prospects are poor (Friedman et al., 1994; Mills and Blossfeld, 2005). In addition, it is likely that gender symmetry is greater for highly educated women. Because of their investments in education and their more favourable job skills, they value employment highly and have a strong attachment to the labour market (Bolzendahl and Myers, 2004). Non-employment may be at odds with their aspirations and signal financial uncertainty (Liefbroer and Corijn, 1999). In line with the aforementioned studies emphasizing the importance of female employment in gender-egalitarian settings (Jalovaara, 2012; Kalmijn, 2011), both men and women are expected to contribute financially to the household in this group. Women with less education, by contrast, are less likely to adopt egalitarian attitudes and have lower employment expectations (Glass, 1992; Kane and Sanchez, 1994). The results further suggest that the relation between being student and first union formation does not significantly differ by educational level.

Finally, interaction between education and the aggregate-level unemployment rate yields statistically significant results for men only, with economic context particularly affecting entry into a first union among those with tertiary education (Hypothesis 3). This suggests that different mechanisms are at work. For non-tertiary educated men, forming a first partnership may reflect a strategy aimed at reducing uncertainty. In this case, young people with a lower education, a priori experiencing the most obstacles to finding stable work, are predicted to be less sensitive to variations in short-term macro-economic circumstances (Fondeur and Minni, 2004; Germe et al., 2003). Men entering the labour market with a high education may choose lower-status and short-term jobs when circumstances are unfavourable. This may be perceived as a difficult labour market situation which does not provide the expected opportunities for career development (Verhaest and Omey, 2009). We find less support for Hypothesis 3 among women, for whom no effect of macro-level economic conditions is found, whatever their level of education.

Conclusion

Our results indicate that the role of labour market positions with respect to partnering behaviour differs significantly by gender and educational level. For men, not being employed reduces the probability of entering a co-residential union, regardless of level of education. For women, not being employed reduces the probability of entering a co-residential union, but only among those with

tertiary education. Based on these results, we argue that employment is progressively becoming a decisive factor for partnering among French women as female educational levels increase. In line with our expectations, the importance of male and female economic contributions to the family may thus be converging for a rising number of households in France.

Aggregate-level economic adversity is observed to postpone union formation among men, controlling for individual-level employment status, and this is predominantly the case among the highest educated group. In the wake of the recent European economic crises (2008 and later), the most dramatic increases in French male unemployment are observed for non-tertiary educated individuals (Eurostat, 2014a)⁽¹⁴⁾ whose employment prospects have been particularly affected. For this group, union formation as a strategy to reduce uncertainty may rise further.

Our study on the association between variation in both aggregate-level economic context and individual employment and union formation is subject to a number of limitations. Given the high number of fixed-term contracts in France, especially among young adults, including additional data on employment contract duration would provide an avenue of further research (Ekert-Jaffé and Solaz, 2002; Pailhé and Solaz, 2012). This would allow us to explore whether the association between aggregate-level economic context and union formation can be (partially) attributed to increasing employment uncertainty. In addition, a higher frequency of short-term contracts among less educated workers could possibly explain the smaller differences between non-employment and employment in the likelihood of partnership formation for this group. Finally, it would be relevant to take longitudinal micro-data on income into account as this would allow us to distinguish between the effect of non-employment linked to employment uncertainty, and the effect linked to the loss of financial resources.

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(14) Between 2008 and 2013 a 7 percentage point rise in the unemployment rate was observed among men aged 15-39 with ISCED-levels 0-2. For ISCED-levels 3-4 and 5-6 (tertiary educated) it rose by 5 and 1 percentage points, respectively (Eurostat, 2014a).



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Jorik VERGAUWEN, Karel NEELS, Jonas WOOD • EDUCATIONAL DIFFERENTIALS IN THE IMPACT OF MICRO- AND MACRO-LEVEL ECONOMIC CONDITIONS ON UNION FORMATION IN FRANCE (1993-2008)

Delayed union formation has been suggested as one of the main pathways through which economic conditions affect fertility. The link between (un)employment and union formation has received limited attention in the literature, however. Using longitudinal micro-data from the first and second waves of the Generations and Gender Survey, in tandem with contextual data on unemployment rates, multilevel discrete-time hazard models are estimated to assess how individual employment status and aggregate-level economic conditions have affected entry into a first co-residential union of young adults in France (1993-2008). We focus on whether the association between individual-level employment status and aggregate-level unemployment rates on the one hand, and union formation on the other, differs by gender and level of education. For men, we find that not being employed reduces the probability of entering a co-residential union, whatever their level of education. Among women, not being employed delays union formation only for those with tertiary education. A higher aggregate-level unemployment rate negatively affects the probability of entering a co-residential union among tertiary educated men, but no association is found among women.

Jorik VERGAUWEN, Karel NEELS, Jonas WOOD • IMPACT DE LA SITUATION ÉCONOMIQUE SUR LA MISE EN COUPLE EN FRANCE (1993-2008) SELON LE NIVEAU D'ÉTUDES

La mise en couple tardive est considérée comme l'un des principaux canaux par lesquels le contexte économique et la situation vis-à-vis de l'emploi influent sur la fécondité. L'article s'appuie sur des données individuelles longitudinales issues des deux premières vagues de l'enquête française Étude des relations familiales et intergénérationnelles (*Generations and Gender Survey*, Erfi-GGS), ainsi que des données contextuelles mensuelles sur les taux de chômage par sexe et niveau d'études. Des modèles de durée multiniveau en temps discret sont estimés afin d'évaluer de quelle manière la situation professionnelle individuelle et l'environnement économique ont influencé l'entrée en première union cohabitante chez les jeunes adultes entre 1993 et 2008. Nous cherchons à déterminer si la relation entre, d'une part, la situation professionnelle individuelle et le taux de chômage, et, d'autre part, la mise en couple varie selon le sexe et le niveau d'études. Pour les hommes, le fait de ne pas travailler diminue les chances de former une première union cohabitante, quel que soit le niveau d'études. Pour les femmes, l'absence de travail ne retarde la mise en couple que pour celles ayant fait des études supérieures. Un taux de chômage élevé réduit les chances de former une première union pour les hommes ayant fait des études supérieures, tandis qu'aucune relation de ce type n'est constatée chez les femmes.

Jorik VERGAUWEN, Karel NEELS, Jonas WOOD • IMPACTO DE LA SITUACIÓN ECONÓMICA EN LA FORMACIÓN DE PAREJAS SEGÚN EL NIVEL DE ESTUDIOS EN FRANCIA (1993-2008)

La formación tardía de las parejas es considerada como una de las principales vías por las que el contexto económico y la situación respecto al empleo influyen sobre la fecundidad. El artículo es basado sobre datos individuales longitudinales provenientes de las dos primeras olas de la encuesta francesa Estudio de las relaciones familiares e inter-generacionales (*Generations and Gender Survey*, *Erfi-GGS*), así como de datos contextuales mensuales sobre las tasas de desempleo de los jóvenes según el sexo y el nivel de estudios. Se han estimado modelos de duración multinivel en tiempo discreto a fin de evaluar la influencia de la situación profesional individual y del entorno económico sobre la entrada en primera unión de los jóvenes adultos entre 1993 y 2008). Se intenta averiguar si dicha influencia varía según el sexo y el nivel de estudios. En los hombres, el hecho de no trabajar disminuye la probabilidad de formar una primera unión, cualquiera que sea el nivel de estudios. En las mujeres, la ausencia de trabajo impide la unión solamente en las que han hecho estudios superiores. Una tasa de desempleo elevada reduce la probabilidad de formar pareja en los hombres que han hecho estudios superiores, mientras que en las mujeres no se observa ninguna relación de ese tipo.

Keywords: union formation, education, employment, economic context, France.

