Eur J Population (2017) 33:55–85
DOI 10.1007/s10680-016-9394-0

Educational Enrolment, Double-Status Positions and the Transition to Motherhood in Hungary

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Received: 4 May 2015 / Accepted: 17 August 2016 / Published online: 31 October 2016

Abstract It is well known that participation in education is incompatible with the transition to motherhood. However, enrolment is overwhelmingly treated as a single status even though participation in education may be combined with employment—resulting in double-status positions, and the fertility implications of double-status positions are less clear-cut. Relying on normative and economic approaches, we develop original and competing hypotheses regarding the effect of double-status positions on the transition to motherhood. We also speculate on how the post-communist transition and institutional context might influence the hypothesised effects. The hypotheses are tested using event history data from the Hungarian Generations and Gender Survey. We employ event history methods, which take into account the potential endogeneity of employment and enrolment decisions. We find robust evidence that first birth rates are higher among women in double-status positions than among women who are merely enrolled, but that difference is smaller in younger cohorts than in older ones. We also find some evidence that first birth rates are lower in double-status positions than among women who are employed but not enrolled. Our findings suggest that the conflict between participation in education and motherhood is mitigated in double-status positions, especially among members of the oldest cohort. Since double status is prevalent in modern societies, but has different meanings in different contexts according to educational system and welfare state, we argue for future research on this issue.

Keywords Fertility · Transition to motherhood · Education · Educational expansion · Post-communist fertility

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1 Introduction

In their seminal papers, Hoem (1986) as well as Blossfeld and Huinink (1991) demonstrated the negative effect of participation in education on the transition to marriage and motherhood. Subsequent empirical research provided ample evidence for this finding both for Western and for Eastern European countries (Thornton et al. 1995; Liefbroer and Corijn 1999; Andersson 2000; Kantorová 2004; Lappegard and Ronsen 2005; Balbo et al. 2013). The negative impact of participation in education at the individual level suggests that the expansion of higher education is one of the major drivers of fertility decline and of the postponement of births at the societal level (Kohler et al. 2002; Neels and De Wachter 2010). Recently, Ní Bhrolcháin and Beaujouan (2012) showed that fertility postponement in France and England is mainly due to educational expansion.

Educational expansion is identified as one of the major factors behind the rapid fertility decline in post-communist countries (Sobotka 2002, 2011; Thornton and Philipov 2009). Indeed, all post-communist countries experienced increasing participation in (higher) education. Figure 1 shows the number of full-time and part-time students enrolled in tertiary education in Hungary and reveals a neglected feature of educational expansion. Although the expansion was triggered mainly by increasing participation in *full-time* education, expansion also accompanied increasing participation in *part-time* educational programmes during that period. Full-time education kept expanding between 1991 and 2011, but at a decreasing rate. Part-time education also expanded during the 1990s, though at an increasing rate. Expansion then slowed down and reached its peak in 2003 and declined thereafter.

As we show later on in this paper, a fundamental difference between full-time and part-time students is that the latter are often employed, although employment is also found among full-time students (Beerkens et al. 2011). Indeed, participation in education may be combined with employment, and students (or employees) often find themselves in double-status positions. Double-status positions are present in both advanced capitalist and post-socialist countries (Wolbers 2003; Róbert and Saar 2012). These positions emerge for various reasons: students become employees in order to finance their lives or to accumulate some work experience, which might help them to find a job after the completion of their studies. Employees start studying in order to upgrade their skills or to obtain credentials and thereby improve their career prospects. Students who participate in dual-education systems are simply requested to work. These different forms of double-status positions therefore have different meanings for students in manifold social positions and social contexts (Wolbers 2003; Darmody and Smith 2008; Beerkens et al. 2011; Róbert and Saar 2012).

The central claim of our paper is that the presence of double-status positions calls for a re-assessment of the assumption that participation in education is incompatible with motherhood. On the one hand, the conflict roles between being a student and being a mother might be even more pronounced if one is also employed at the same time, since allocating sufficient time to studies, employment and childcare is too

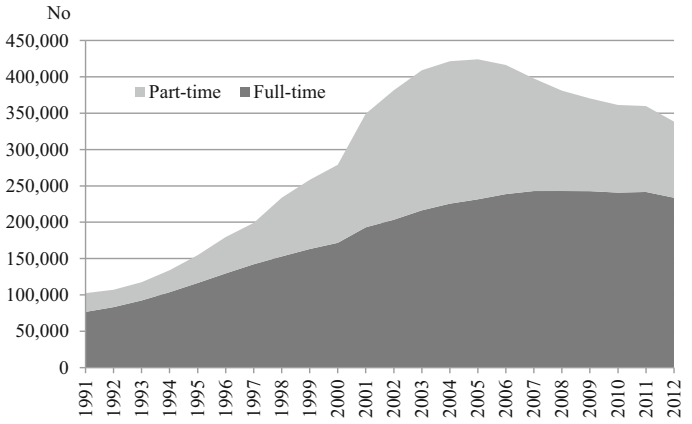

Fig. 1 Number of full-time and part-time students enrolled in Hungary, 1991–2012. *Source:* Own calculation, based on education statistics, Hungarian Central Statistical Office

demanding and conflicting. Childbearing in a double-status position could jeopardise not only the chances of completing studies but also of maintaining employment. On the other hand, employment status and the associated income might mitigate the conflict between these seemingly contradictory social roles. Blossfeld and Huinink (1991) argued that the negative fertility effect of educational participation is due to societal normative expectations, which discourage students from becoming mothers. They also suggested that there are no normative expectations, which would prohibit employees from becoming mothers. There should be no normative conflict between being a student and being a mother among employees if women in double-status positions are mainly perceived as employees rather than students. This line of argument suggests that the conflict between the roles of student and mother is mitigated, rather than deepened, among women in double-status positions.

The general fertility implications of part-time educational expansion, and in particular that of double-status positions, are therefore unclear. To our knowledge, no effort has been made to estimate the impact of double-status positions on the transition to motherhood. In this paper, we make an effort to fill this gap. We begin by discussing the relevant literature and formulating competing hypotheses concerning the fertility effects of double-status positions. We also speculate on how the post-communist transition and the Hungarian institutional context influence the hypothesised effects. The hypotheses are tested using the Hungarian Generation and Gender Survey dataset. The sample and the analytical strategy are described in Sect. 3. We employ discrete time-event-history models, and we also take into account the endogeneity of participation in education and employment. Estimation results are presented in Sect. 4. We find consistent evidence that the transition rate to motherhood is higher among women occupying double-status positions than among those who participate in education but who are not employed. This suggests that employment substantially mitigates the conflict between the roles of being a student and that of being a mother.

2 Theory and Hypotheses

Hypotheses on the fertility implications of double-status positions are developed as follows. First, we briefly review normative and economic explanations of why participation in education leads to the postponement of motherhood. We then apply these explanations to double-status positions. Finally, we consider the Hungarian institutional context and the post-communist transition in order to predict which of the general hypotheses accounts for the observed fertility behaviour of various cohorts.

2.1 Incompatibility Between School Enrolment and Parental Status

In their seminal paper, Blossfeld and Huinink (1991) argued that participation in education, rather than the level of education and accumulation of human capital, plays a key role in influencing if and when a woman becomes a parent and also accounts for the postponement of motherhood. Societal and economic mechanisms may explain the consistent negative effect of participation in education on the transition to motherhood. Normative approaches to the transition to adulthood stress the prevalence of *sequencing norms*, especially in cases of education *and* parenthood: the individual should complete education first, and thereafter enter into parenthood. Completing education is a necessary prerequisite of becoming a parent (Blossfeld and Huinink 1991; Huinink 1995; Liefbroer and Billari 2010; Balbo et al. 2013). Such sequencing norms reflect the common observation that students typically do not possess the material resources necessary to successfully fulfil the role of a parent. The *role incompatibility* approach, which relies on role-strain theory (cf. Goode 1960), also includes normative elements. However, it focuses on the fact that time and other resources are allocated to the fulfilment of social roles. From this point of view, being enrolled and a mother is too demanding, and the scarcity of time and attention makes the two roles incompatible. For this reason, the two roles cannot usually be successfully fulfilled at the same time. The role incompatibility approach is repeatedly used to understand the childbearing decision of employed women (Rindfuss and Brewster 1996), and it is also used to understand the relationship between education and fertility (Huinink 1995).

The economic approach[1] focuses on the costs of childbearing (Gustafsson 2001; Kantorová 2004). These costs include (1) direct expenditures, (2) direct opportunity cost due to engagement in childcare and (3) losses in future earnings due to forgone human capital investments (the "wage penalty").[2] Since enrolled women do not receive a salary, the direct opportunity cost of becoming a mother is zero. By contrast, lifetime forgone wages are significant due to termination of education before receiving the qualification. Participation in education is a substantial

[1] Here we discuss only those aspects of the economic approach that focus on investments in human capital.

[2] For reasons of simplicity, the present discussion as well as subsequent derivations of hypotheses neglects the partners. We are of course aware of theories and empirical research that explore the effect of a partner's income and education on the fertility behaviour of women. Nevertheless, partner effects of this kind are not considered in the present paper.

investment in human capital and is rewarded with a wage premium. Hence, the interruption or postponement of studies and the associated delay to labour market entry reduces lifetime earnings. Thus, educational enrolment reduces the incentives to become a parent during the period of study.

Our first hypothesis is in line with former research findings, including the Blossfeld–Huinink hypothesis.

H1 The transition rate to motherhood is lower among those who participate in education than among those who (1) do not participate in education or (2) are employed.

2.2 The Fertility Effect of Double-Status Positions

We consider normative expectations, role incompatibility and the costs of childbearing in order to derive hypotheses on the fertility effect of double-status positions. Making assumptions on the strength of the normative and economic mechanism in double-status positions is not trivial. On the one hand, double-status positions could resemble student status, where there are strong normative expectations and sizable economic costs. On the other hand, double-status positions might resemble employment positions, where normative constraints are weak or absent but losses in future earnings are not negligible. In this subsection, we consider both possibilities. Our argument is summarised in Table 1.

Case I Double-status positions are predominantly student positions. Students in higher education and who find employment in order to finance their studies or to acquire work experience are good and visible examples. In this case, the dominant social role remains being a student. The normative expectations regarding parenthood are the same as among students, because the choice of employment

Table 1 Strength of deterring effects of normative and economic mechanisms in enrolment, employment and double-status positions

Mechanism	Enrolled	Employed	Doubles status		
			Multiple role conflict (H2a)	Mitigated role conflict (H2a)	Job dominance (H2c)
Sequencing norms	++	0	++	0	0
Role incompatibility	+	+	++	++	+
Direct expenditures	++	+	++	+	+
Opportunity costs	0	+	+	+	+
Wage penalty	++	+	++	++	+

0 signifies no effect. + and ++ signify moderate and strong effect, respectively

status is motivated by the lack of career resources. Moreover, role incompatibility may be more pronounced because three societal roles—those of the student, mother and employee—must be reconciled. Besides, direct opportunity costs are also high because upon becoming a mother less time can be allocated to employment. Our first hypothesis regarding the fertility implications of double-status positions reads as follows:

H2a *The multiple role conflict hypothesis* The transition rate to motherhood among women in double-status positions is lower than the transition rate among students and that among employees.

Case II Double-status positions are predominantly employment positions. This case might be exemplified by employees who wish to upgrade their skills (or educational credentials) in order to protect or improve their career prospects. Entering a double-status position indicates a relatively high investment in human capital compared to the investment made by those who are employed but not enrolled in education. The most important feature of the present case (compared to the previous one) is that normative expectations regarding the sequencing of life-course events have no influence in double-status positions. In those positions, people can perceive themselves as employees rather than as students because they have a more or less completed educational career and are financially independent of their parents. Women in double-status positions are perceived as being "ready" for parenthood, unlike their enrolled but not employed counterparts. In the absence of sequencing norms, birth rates should be higher in double-status positions than in "mere" enrolment positions.

The relationship of birth rates in double-status positions to employment positions is less clear. First, although reconciliation of family, studies and employment should be difficult, the availability of part-time educational programmes and part-time employment might reduce role incompatibility. Second, the losses from career interruptions might be even higher than those among pure employees. Double-status positions are chosen in order to attain a new educational qualification and to replace a stagnating and possibly uncertain career with either an upward-sloping or a certain (but flat) wage curve.

If double-status positions can be characterised by a large wage penalty or a large degree of role incompatibility, then we have the following hypothesis:

H2b *The mitigated role conflict hypothesis* The transition rate to motherhood among women in double-status positions is higher than the transition rate among students but is lower than the transition rate among employees.

If the wage penalty in double-status positions is similar as in employment positions, and/or there is no serious role conflict between enrolment, employment and motherhood, we have the third competing hypothesis:

H2c *The job status dominance hypothesis* The transition rate to motherhood among women in double-status positions is higher than the transition rate among students but is the same as the transition rate among employees.

2.3 Country-Specific and Cohort-Specific Fertility Effects of Double-Status Positions

It has been argued in the literature that the effect of employment and educational status on the transition to parenthood could change over time and that the magnitude and the direction of the effects might be contingent on societal conditions (Adsera 2004; Blossfeld 1995; Liefbroer and Corijn 1999; Martin-Garcia and Baizan 2006; Matyisak and Vignoli 2008). Therefore, we briefly examine the parental leave system as well as changes in the labour market and the education system during the transition.[3] As long as the characteristics of the parental leave regime (*institutional effect*) account for altering cost–benefit relations of becoming a mother, changes to the labour market and educational system might account for changing contingencies over time (*transformation effects*).

2.3.1 Institutional Context: Long and Well-Compensated Parental Leave

At the macro-level, the length and the generosity of parental leave only have a weak influence on fertility (Luci-Greulich and Thévenon 2013). At the micro-level, however, the relationship is more straightforward (Aassve et al. 2006; Lalive and Zweimüller 2009). The Hungarian parental leave regime offers a long and well-compensated period of birth and parental leave. Parental leave is available for 36 months and generally works as an income compensation system. The amount of compensation depends on previous employment status. People who were employed prior to parental leave receive 100 % of their former wages in the first 6 months; then, between months 7 and 24, they are entitled to 75 % of that sum. In the child's third year, the parent is entitled to a flat-rate sum, which is much lower than this level (Szeleva and Polakowski 2008; Korintus 2010; Makay and Blaskó 2012; Makay 2015). People without previous employment receive the lower-level flat-rate sum over the 3 years. All other things being equal, a generously compensated parental leave system decreases the (direct) opportunity costs of having a child among double-status and employed only women (cf. Table 1).

2.3.2 Societal Transformation: Changes in the Labour Market and the Education System

To measure behavioural changes, we prefer to use cohorts instead of periods. Since the period effect of societal transformation might influence childlessness in a specific age range, period effects should be strongly correlated with the behaviour of subsequent cohorts (Ryder 1965; Elder 1974; Inglehart 1977). We will consider and compare "older" and "younger" cohorts whose fertility behaviour was shaped by the pre- and post-communist contexts.[4] The transition to motherhood of our oldest

[3] Detailed analysis of the post-socialist transition and an outline of the Hungarian context are beyond the scope of the present paper. For a more detailed overview about institutional changes related to life-course transitions, see Spéder et al. (2010).

[4] In our empirical study, women born in 1961–1965 and in 1975–1983 are used to represent old and young cohorts.

cohort is shaped exclusively by the communist reproductive system. Our youngest cohort, which became adult after the transition, generally had a first child after the millennium.

2.3.2.1 Shrinkage of the Labour Market The shift from the shortage economy (Kornai 1980) to the market economy (the supply economy) caused both qualitative and quantitative changes in the labour market. The market shrank dramatically (i.e. by 20 %in 1992), which led to a dramatic increase in unemployment. The increasing competition among job seekers and employees, together with the weakened bargaining power of trade unions substantially, increased the insecurity of employment. The reconciliation of work and family became more difficult because part-time employment was negligible and actual working hours in full-time jobs increased.

Structural changes in the economy (such as the collapse of heavy industry and the increasing share of the service sector, foreign direct investments in the manufacturing industry, increasing exposure to shocks in the global economy and the diffusion of information technologies) had profound implications for wage inequalities, especially across educational categories and cohorts. The wage returns to upper secondary and higher education increased over the 1990s, especially among members of younger cohorts, while the returns to labour market experience and education acquired before the transition diminished among unskilled and relatively old employees (Kertesi and Köllo 2002; Kézdi 2005; Kantorová 2004; Brunello et al. 2010; Bartus et al. 2013). The large wage premiums indicate a continuous increase in demand for skilled and educated workers.

These changes in the Hungarian labour market during the transition imply that the wage penalty associated with interrupted studies is larger among members of younger birth cohorts than among members of older ones. As a consequence, participation in education and childbearing became more incompatible during and following the post-socialist transition. A modified version of our first Hypothesis (H1) reads as:

H3a The negative effect of participation in education on the rate of transition to motherhood is stronger among members of younger cohorts than among those of older cohorts.

2.3.2.2 Expansion of and Structural Changes in Education System Education during the communist period was almost completely full time, though part-time education (distance learning) was also available[5] and education was basically free of charge. Part-time educational programmes expanded during the transition (see Fig. 1). The increasing demand for part-time education related to the growing demand for educated workers during the post-socialist transition. In contrast to most full-time programmes, part-time programmes are typically offered in tertiary

[5] Marxist–Leninist political science degrees necessary to obtain higher (cadre) positions could be acquired via distant learning, but there were also other degrees obtainable through part-time education.

education and participants pay tuition fees.[6] However, part-time programmes can also be found on the secondary level.

Figure 2 shows that participation in part-time education is related to age. While full-time education is the dominant form of tertiary education among the youngest (18–22 years), part-time education is more significant among young adults towards the end of their twenties (26–30 years). Because university studies are usually completed around the age of 25, it is reasonable to assume that young people above the age of 25 and who participate in part-time education are also employees. Education statistics show that part-time education began to be popular among cohorts born in the beginning of the 1970s (1970–1974) and remained prevalent in subsequent birth cohorts.

For the employed, the choice of part-time education over full-time education is natural. Part-time education can be reconciled with a job, and employees (or their employers) are in a position to pay tuition fees. Therefore, part-time educational programmes contributed significantly to the emergence of double-status positions.

Double-status positions also emerge among students enrolled in full-time programmes, but for another reason. First, the overall relative cost of full-time studies increased somewhat in Hungary (Róbert and Saar 2012). Second, there was a growing demand for internships and part-time jobs among students. Double-status positions are thus heterogeneous: they include relatively old employees who predominantly seek part-time education and who aim to upgrade their qualifications, and young students who participate in full-time education and seek some employment.

We argued earlier that increases in the labour market value of education, especially among members of younger cohorts, should increase the negative effect of participation of education on first birth rates. The increasing value of education in the labour market represents an increased wage penalty for those who study and work and the same time. We therefore assume increasing costs of motherhood, even alongside the proliferation of part-time education, may smooth role incompatibility. We therefore hypothesise that:

H3b The decrease in first birth rates is larger among women in double-status positions than among women who are only enrolled or only employed. In other words, the difference in first birth rates between these status positions is larger in older cohorts than in younger ones.

3 Data and Methods

3.1 Data and Variables

We use the first three waves of the Hungarian Gender and Generation survey, *Turning Points of the Life Course*, collected in 2001, 2004 and 2008.[7] The first and

[6] Educational institutions were also interested in offering part-time educational programmes because they were allowed to charge fees to part-time students. Full-time education, in contrast, was free of charge during the 1990s and 2000s.

[7] For simplicity, we refer to this dataset as the three waves of the Hungarian GGS.

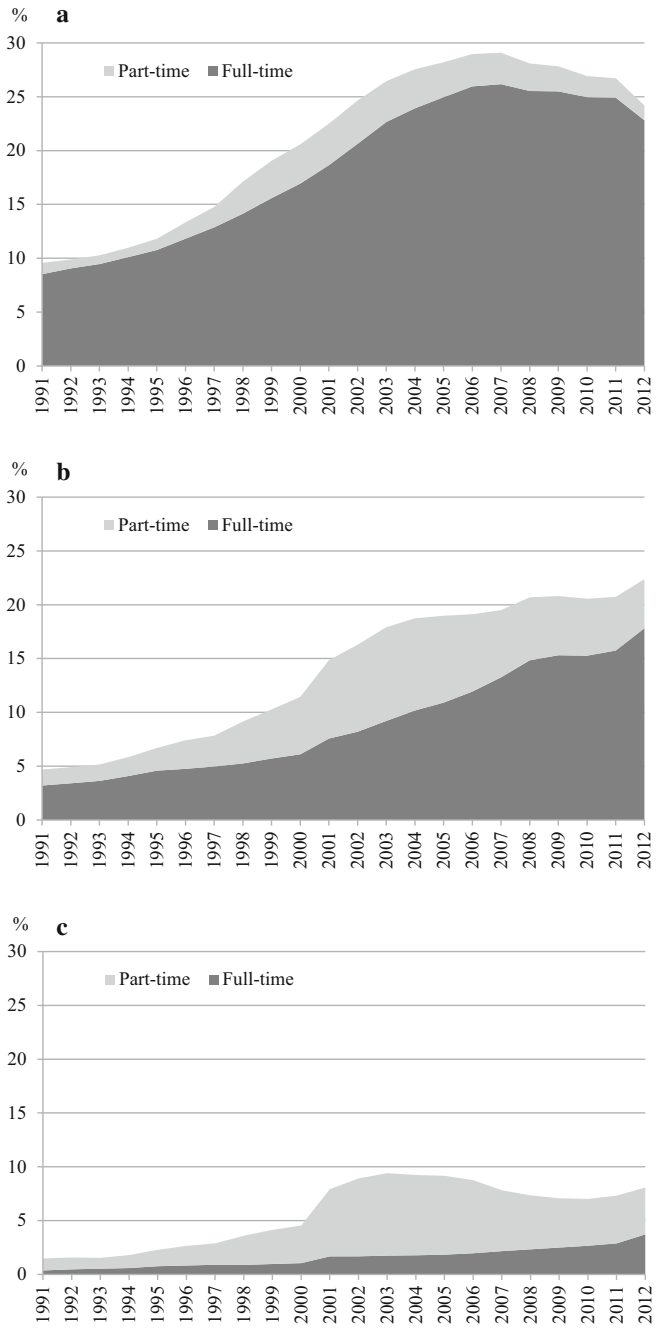

Fig. 2 Ratio of full-time and part-time enrolled among age groups in Hungary, 1991–2012. **a** 18–22 years. **b** 23–25 years. **c** 26–30 years. *Source:* Own calculation, based on education statistics, Hungarian Central Statistical Office

subsequent waves include detailed retrospective information on fertility and partnership histories according to the concept of the GGP (cf. Vikat et al. 2007). The 2008 wave also included separate sets of retrospective questions on labour force participation and educational enrolment histories. The method of data collection enables one to identify those who were employed and enrolled at the same time. In addition, the question format allows us to construct a person-month dataset in which each record contains monthly information on both employment and enrolment status.

For the purposes of our empirical analyses, we include women born between 1961 and 1983 who participated in all three waves. We restrict the sample to these cohorts because in the third-wave questionnaire participants were asked to report their employment history starting in 1975. In this way, employment history data are left-truncated. Women born in 1961 turned 14 in 1975 when they were first at the risk of becoming a mother. Thus, the effect of employment status on the transition to motherhood can be studied using women who were born in 1961 or later. Despite this limitation, the data allow us to observe a 33-year-long period of time and, as mentioned earlier, examine the fertility behaviour of women before and after the societal transition. After data cleaning and excluding cases with missing values, we are left with a dataset covering 2462 women.

Data analyses make use of a person-month dataset, which includes 324,819 records on the 2462 women. Observations in the dataset span the period of conception risk. The risk period begins when the observed women turned 14. The last observation for a woman is either conception or censoring. The date of the conception is calculated as the date of the live birth minus 9 months. The number of conceptions is 1823. The length of the risk period ranges between two and 404 months. An average woman is observed for 132 months (11 years). Since we study women born between 1960 and 1983 and the last wave of the panel dataset was collected in November 2008, women cannot be older than 47 years when the observation period ends.

The person-month dataset allows us to create variables, which (can and do) vary over time. Our key explanatory variables are related to employment and enrolment status. *Employment status* is captured by a dummy variable indicating those who are employed, self-employed or owners. *Enrolment* is a dummy variable identifying those who either participate in full-time or part-time education. The *joint employment–enrolment status* variable is just the Cartesian product of the employment and enrolment variables. The four categories of the joint employment–enrolment status variable are: double status (that is, employed and enrolled), employed only, enrolled only and neither employed nor enrolled.

We use *birth cohort* categories to capture the effects of changes in societal conditions, as well as interaction terms between status categories of our interest and birth cohort categories. As noted, we use cohorts to capture the interrelated effects of period and cohort. We make a distinction between four birth cohorts. The oldest and youngest of our four cohorts represent childbearing behaviour during communism and under the new market economy. The first category includes women born between 1961 and 1965. Members of this group were 25–29 years old when the post-communist transition began in 1990 and typically

started their fertility career during socialist times. The second category includes women born between 1966 and 1970, who were 20–24 years old at the beginning of the transition. Since the mean age at first birth was 23.1 in 1990, several women in that age group started their fertility career during the last years of state socialism. The third and fourth categories include women born between 1971 and 1975 and between 1976 and 1983, respectively. Members of these cohorts were below the age of 20 at the beginning of the transition, and therefore, their fertility career reflects the societal conditions during the first and later phases of the transition.

We will use *age*, *age-squared* and *level of education* as control variables.[8] Age is time-varying. In order to minimise the correlation between age and age-squared, we centre the age variable around 25 before calculating the squared term. Level of education is a time-varying categorical variable with four categories: primary education, lower secondary education, upper secondary education and higher education. Primary education in Hungary typically begins at the age of six or seven and lasts for 8 years. At secondary level, one can follow either the vocational or the academic secondary track, corresponding to lower and upper secondary education, respectively. The main difference between these tracks is that only the latter offers the opportunity of the Matura (or A-level) examination, which is a prerequisite for college and university admission. Lower and upper secondary education corresponds to vocational secondary and academic secondary education, respectively.

Table 2 presents the percentage distribution of conceptions as well as the means of the explanatory variables in the person-month dataset. Note that birth cohorts are not evenly represented as a result of the construction of the cohort categories: the eldest cohort makes up about 16 % of the sample, while about 40 % belongs to the youngest cohort. Conceptions occur more frequently in the elder cohorts, which is consistent with previous studies documenting the fertility decline after the transition (Frejka 2008). However, the large difference in the percentage of conceptions between cohorts does not imply a large difference in completed fertility because observations of the youngest birth cohort are heavily censored in our sample. For the same reason, the small difference in exposure time between the oldest and youngest cohorts does not contradict previous findings on postponing behaviour since censored observations are more frequent in younger birth cohorts.

Cohort differences in the employment–enrolment variable reflect the shrinking labour market and educational expansion during the post-socialist transition. The percentage of enrolled (but not employed) persons is larger in the youngest birth cohorts. Similarly, the proportion of the highly educated is larger in the youngest birth cohort than in the eldest one. The proportion of women occupying a double-status position is 7 % in the youngest birth cohort, but 13 % in all other cohorts.

[8] During the analyses, we also estimated models in which partnership status was included. However, the inclusion of partnership status does not affect our conclusions. However, the inclusion of partnership status immediately raises the concern of endogeneity.

Table 2 Means and percentages of key variables in the person-month data by cohort

Variable	1961–1965	1966–1970	1971–1975	1976–1983
Dependent variable				
No. of conceptions	437	444	467	475
% of conceptions	0.86	0.70	0.59	0.36
Mean of exposure time (in month)	83.26	91.31	88.80	79.67
Independent variables				
Employment–enrolment status				
Double status	0.13	0.13	0.13	0.07
Employed only	0.34	0.39	0.38	0.32
Enrolled only	0.44	0.40	0.40	0.51
Neither enrolled nor employed	0.09	0.08	0.10	0.10
Age (time-varying)	20.96	21.60	21.40	20.65
Age 25	−4.04	−3.40	−3.60	−4.35
(Age 25) squared	62.06	51.82	42.89	37.40
Education				
Primary or less	0.49	0.42	0.39	0.38
Lower secondary	0.14	0.17	0.17	0.12
Upper secondary	0.29	0.28	0.31	0.31
Higher	0.08	0.14	0.13	0.20
No. of person-months	50,911	63,120	79,020	13,1768
No. of persons	464	496	571	931

The statistics were calculated using the person-month dataset. See text for description

3.2 Analytical Strategy

We test our hypothesis using discrete time-event-history analysis, that is, by estimating logistic regression models of first conceptions using the person-period dataset. First, we estimate the effect of the separate enrolment and employment categories. We then proceed to estimate the effects of the combined enrolment and employment categories. Within each step, we estimate two models. The first model includes the status categories of substantive interest, as well as birth cohort, highest level of education, age and age-squared. The second model adds interactions among the status categories and birth cohort categories to the model, in order to examine whether the hypothesised status effects are conditional on cohort. We adjust the standard errors for clustering by estimating cluster-adjusted robust standard errors, which is a standard feature of the statistical package Stata.

Participation in education and employment is not an exogenous factor. Rather, they are chosen by the agents. The transition to motherhood and the decision to participate in education might be influenced by unobserved common factors. These common factors might include aspirations and subjective beliefs about prospective careers. For instance, motivated and optimistic women prefer further studies and seek for jobs, so they therefore postpone the transition to motherhood. In the

presence of such unobserved factors, the association between enrolment and the transition of motherhood—net of observed control variables—reflects a combination of the selection effect and the causal effect of enrolment.

To reduce potential endogeneity bias, we re-estimate the regression equations of substantive interest jointly with two other equations which model participation in education and employment. This kind of modelling strategy is common in the demographic literature (Upchurch et al. 2002; Impicciatore and Billari 2012). The enrolment and employment equations include cohort, level of education, the interactions between cohort and education level, age and age-squared, the father's and mother's education when the respondent was 14, and the number of siblings divided into four categories (no siblings, one sibling, two siblings, three or more siblings) as predictors. Parental background and the number of siblings are often used in mobility research to explain decisions to continue in school (see, for instance, Lucas et al. 2011). Besides, parental education and the number of siblings are the only available background variables, which can be used as excluded instruments in the enrolment and the employment equations. While demographers estimate such systems by modelling the correlation structure of random effects, we estimate the conception, enrolment and employment equations using a trivariate probit model, in which the residuals of the underlying latent variable equations are jointly normally distributed (Roodman 2011; Bartus and Roodman 2014).[9]

4 Results

4.1 Descriptive Statistics

In the introduction, we argued that the expansion of part-time education affects women in double-status positions. Table 3 enables assessment of this assumption and provides a description of other important characteristics of women in double-status positions. Table 3 presents the means of enrolment status and the key human capital characteristics by employment–enrolment status. The cohort-specific means are presented in "Appendix" Table 9.

Let us begin by comparing double-status positions and pure enrolment positions. Our argument that the expansion of part-time education goes hand in hand with the expansion of double-status positions is supported by the data. First, women in double-status positions are mostly enrolled part time, while part-time enrolment is very rare among those who are enrolled but not employed (6 %). Another important result is that the share of female college or university graduates among enrolled (but not employed) is only 2 %, while it is ten times higher (20 %) among women in double-status positions. Similarly, lower and upper secondary education is more frequent in double-status positions than among those who study but do not work. These findings suggest that people who wish to obtain a second degree at either secondary or a tertiary level prefer to—or have to—participate in part-time, rather than full-time programmes. Finally, it is worth noting that women who work and

[9] The model is estimated using version 14 of Stata, with the help of the *cmp* module (Roodman 2011).

Table 3 Means of enrolment status and human capital characteristics by employment–enrolment status

Variable	Enrolled	Joint enrolment–employment			
		Double status	Employed only	Enrolled only	Neither enrolled nor employed
Part-time enrolment	0.20	0.81	0	0.06	0
Age (time-varying)	18.48	22.67	24.76	17.51	22.37
Age group					
14–20	0.76	0.35	0.23	0.85	0.46
21–25	0.19	0.42	0.38	0.14	0.29
26–30	0.04	0.18	0.25	0.01	0.15
31+	0.01	0.05	0.14	0.00	0.10
Education					
Primary or less	0.60	0.11	0.10	0.72	0.37
Lower secondary	0.07	0.23	0.26	0.03	0.18
Upper secondary	0.27	0.45	0.35	0.23	0.29
Higher	0.06	0.21	0.29	0.02	0.15

The statistics were calculated using the person-month dataset. See text for description

study at the same time are older than their enrolled but non-working counterparts. About 23 % of women in double-status positions are older than 25, while this proportion is only 1 % among those who study but do not work. The strong association between part-time education and double-status positions, and the differences in human capital characteristics suggest that part-time educational programmes generally enable employees with some labour market experience to upgrade their educational credentials.

Table 4 presents the hazards of first conceptions by status and birth cohort. In light of the previous research findings, it is not surprising that births occur at a lower rate among enrolled than among the not enrolled. However, the type of enrolment makes a difference: conceptions are rare among those who are enrolled full time, but are frequent among those who are enrolled part time, especially those born between 1961 and 1970. Employment status also matters: conceptions are more frequent when one is employed. Conceptions frequently occur among women in double-status positions as well. This is not surprising since birth rates are relatively high among part-time students, and being a part-time student is correlated with having a double-status position. Moreover, high birth rates in double-status positions can also be explained in terms of age composition: the majority of women in double-status positions are older than those who study but who do not work at the same time and are therefore closer to the age when births occur more frequently.

4.2 The Separate Effects of Enrolment and Employment

We begin our regression analyses by testing the assumption that participation in education lowers the transition rate to motherhood. We try to replicate the Blossfeld

Table 4 Hazard rates of first conceptions by enrolment and employment status and birth cohort

	1961–1965	1966–1970	1971–1975	1976–1980
Enrolment status				
Not enrolled	1.325	1.001	0.902	0.695
Enrolled, out of which:	0.507	0.440	0.311	0.112
Full-time enrolment	0.208	0.188	0.105	0.055
Part-time enrolment	1.566	1.187	0.867	0.469
Employment status				
Not employed	0.311	0.305	0.219	0.162
Employed	1.491	1.067	0.952	0.672
Employment–enrolment status				
Double status	1.619	1.212	0.912	0.522
Employed only	1.443	1.018	0.965	0.704
Enrolled only	0.190	0.187	0.115	0.057
Neither enrolled nor employed	0.893	0.914	0.649	0.668

The reported hazards are percentages calculated from the person-month dataset. See text for explanation

and Huinink approach within the limitations of our dataset. Estimation results are displayed in Table 5. As expected, enrolment has a negative effect on the transition to motherhood. This finding supports the assumption that the roles of student and mother are incompatible. The negative interaction effect between enrolment status and the birth cohort category 1976–1983 suggests that the conflict between roles became even stronger during the post-socialist transformation. Hypothesis 3a is therefore supported.

In their meta-analysis of studies of the fertility effects of female employment, Matyisak and Vignoli (2008) found that female employment had a positive effect on the transition to motherhood in welfare regimes where parental leave is long and well compensated. To replicate this finding, we add employment status to the previous models. The estimation results of Model 1 in Table 6 show that employment seems to have the assumed effect: employment status has a significant positive effect on the transition to motherhood, while the effect of enrolment remains negative and significant. In Model 2, the main effects of employment and enrolment remain significant. Due to the presence of interaction terms, the main effects characterise the fertility behaviour of the oldest cohort. The interactions between employment and birth cohorts, as well as the interactions between enrolment and birth cohorts, lack statistical significance with the exception of the youngest birth cohort. This means that enrolment and employment were more incompatible with childbearing for the youngest birth cohort than for the oldest one. This finding seems to be consistent with previous research on the Hungarian labour market, which has found that members of younger birth cohorts enjoy higher returns to human capital during the economic transformation processes (Kertesi and Köllo 2002; see also Appendix in Bartus et al. 2013) and that they therefore face a larger opportunity cost upon becoming a mother.

Table 5 Logistic regressions of conceptions on enrolment status

	Model 1		Model 2	
Enrolment	−0.715***	(11.701)	−0.606***	(5.654)
Birth cohort				
1961–1965	0		0	
1966–1970	−0.329***	(4.263)	−0.380***	(3.835)
1971–1975	−0.605***	(8.083)	−0.585***	(6.144)
1976–1983	−1.159***	(16.016)	−0.997***	(10.979)
Educational level (time-varying)				
Primary or less	0		0	
Lower secondary	0.273**	(2.830)	0.277**	(2.904)
Upper secondary	−0.097	(1.086)	−0.087	(0.991)
Higher	−0.006	(0.058)	−0.021	(0.202)
Age 25	0.004	(0.592)	0.005	(0.667)
(Age 25) squared	−0.018***	(14.835)	−0.017***	(14.545)
Not enrolled X 1961–1965			0	
Enrolled X 1966–1970			0.181	(1.274)
Enrolled X 1971–1975			−0.048	(0.340)
Enrolled X 1976–1983			−0.650***	(4.139)
Constant	−3.715***	(33.917)	−3.756***	(32.015)
Person-months	324,819		324,819	
No. of individuals	2462		2462	
Wald Chi-squared	1147.00		1040.13	

Numbers in parentheses are absolute values of t statistics. Standard errors are adjusted for clustering on persons

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Number of events = 1823 in all models

The previous models assumed that participation in education is exogenous. A probit model of conception hazard was re-estimated jointly with the probit model of educational enrolment to control for the endogeneity of participation in education. The results (not shown but available on request) were qualitatively similar to the results reported above.

4.3 The Effect of Double-Status Positions

We now move to estimating the effect of double-status positions. The models are the same as in the previous subsection, with the important exception that the dummy variables for employment and enrolment are replaced by three dummies identifying joint employment–enrolment statuses. Since we wish to compare double-status positions to other positions, we select double-status as the reference category.

The parameter estimates are listed in Table 7. Enrolment has a negative and significant effect in both models, while the coefficient of pure employment lacks statistical significance. In Model 2, the interaction terms between cohort categories,

Table 6 Logistic regressions of conceptions on the separate employment and enrolment statuses

	Model 1		Model 2	
Employment	0.740***	(8.874)	1.019***	(6.577)
Enrolment	−0.484***	(7.373)	−0.281*	(2.258)
Birth cohort				
1961–1965	0		0	
1966–1970	−0.327***	(4.299)	−0.082	(0.379)
1971–1975	−0.573***	(7.771)	−0.406	(1.859)
1976–1983	−1.057***	(14.555)	−0.312	(1.460)
Educational level (time-varying)				
Primary or less	0		0	
Lower secondary	0.066	(0.696)	0.056	(0.589)
Upper secondary	−0.238**	(2.704)	−0.246**	(2.800)
Higher	−0.198	(1.924)	−0.213*	(2.089)
Age 25	−0.003	(0.489)	−0.003	(0.482)
(Age 25) squared	−0.016***	(13.469)	−0.015***	(13.144)
Employment X Birth cohort				
Employed X 1966–1970			−0.316	(1.541)
Employed X 1971–1975			−0.151	(0.732)
Employed X 1976–1983			−0.685***	(3.300)
Enrolment X Birth cohort				
Enrolled X 1966–1970			0.039	(0.225)
Enrolled X 1971–1975			−0.133	(0.775)
Enrolled X 1976–1983			−0.918***	(4.419)
Constant	−4.280***	(33.988)	−4.569***	(25.323)
Person-months	324,819		324,819	
No. of individuals	2462		2462	
Wald Chi-squared	1246.758		1223.02	

Numbers in parentheses are absolute values of t statistics. Standard errors are adjusted for clustering on persons

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Number of events = 1823 in all models

on the one hand, and the employment only and enrolment only variables, on the other, lack statistical significance. These findings suggest that the fertility behaviour of women who have double-status positions (employed and enrolled at the same time) differ sharply from those who are only enrolled (but not employed), but that it does not differ from those who are employed but not enrolled. The role conflict between being a student and being a mother is clearly mitigated in case of double-status positions. To summarise, the estimates support the job status dominance hypothesis.

The hypothesised cohort effects are examined using the predicted monthly hazard of first birth. The predictions are calculated using the parameter estimates of Model 2 presented in Table 7. The predictions are sample averages of observation-specific predicted probabilities. When calculating the observation-specific probabilities, the

Table 7 Logistic regressions of conceptions on joint employment and enrolment statuses

	Model 1		Model 2	
Employment–enrolment status				
Double status	0		0	
Employed only	0.043	(0.712)	−0.025	(0.203)
Enrolled only	−1.727***	(15.308)	−1.774***	(9.529)
Neither enrolled nor employed	−0.056	(0.595)	−0.335	(1.507)
Birth cohort				
1961–1965	0		0	
1966–1970	−0.309***	(4.100)	−0.329*	(2.427)
1971–1975	−0.558***	(7.664)	−0.658***	(4.726)
1976–1983	−0.993***	(13.644)	−1.249***	(7.204)
Educational level (time-varying)				
Primary or less	0		0	
Lower secondary	−0.027	(0.293)	−0.024	(0.263)
Upper secondary	−0.291***	(3.296)	−0.292***	(3.321)
Higher	−0.246*	(2.438)	−0.253*	(2.531)
Age 25	−0.012	(1.734)	−0.011	(1.621)
(Age 25) squared	−0.014***	(12.419)	−0.014***	(12.262)
Employment–Enrolment status X Birth cohort				
Employed only X 1966–1970			−0.061	(0.367)
Employed only X 1971–1975			0.133	(0.798)
Employed only X 1976–1983			0.278	(1.416)
Enrolled only X 1966–1970			0.299	(1.234)
Enrolled only X 1971–1975			0.096	(0.371)
Enrolled only X 1976–1983			−0.084	(0.301)
Neither enrolled nor employed X 1966–1970			0.277	(0.917)
Neither enrolled nor employed X 1971–1975			0.138	(0.475)
Neither enrolled nor employed X 1976–1983			0.656*	(2.308)
Constant	−3.685***	(32.637)	−3.612***	(27.323)
Person-months	324,819		324,819	
No. of individuals	2462		2462	
Wald Chi-squared	1144.228		1099.10	

Numbers in parentheses are absolute values of t statistics. Standard errors are adjusted for clustering on persons

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Number of events = 1823 in all models

cohort and employment–enrolment status dummy variables are set at appropriate values, while other covariates are left as they are in the dataset. The predicted monthly first birth rates are shown in Panel A of Fig. 3. The figure shows that there is a sharp difference in first birth rates between women who are enrolled only and

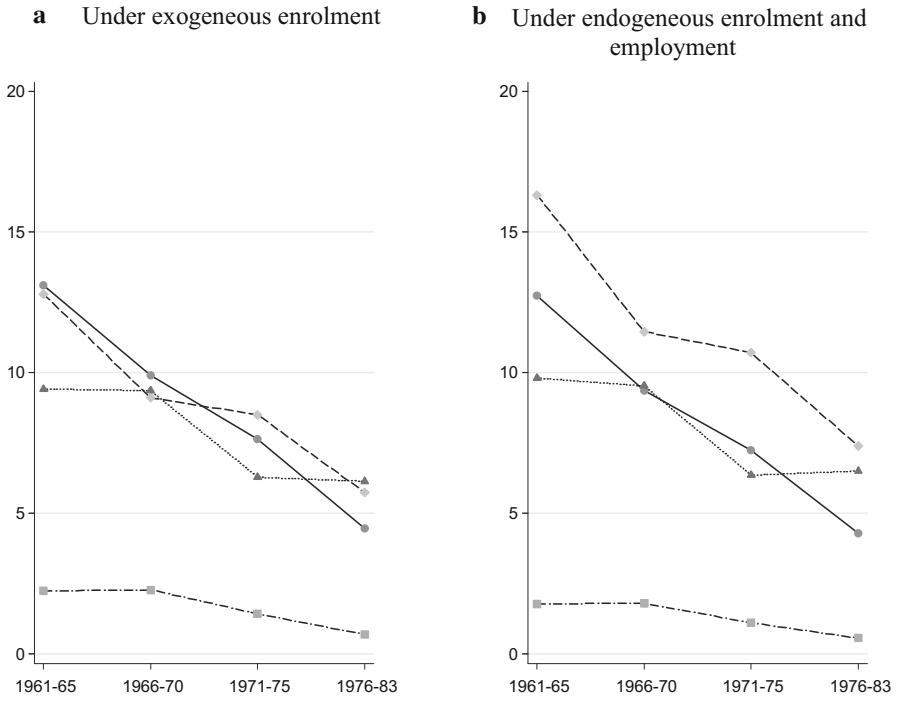

Fig. 3 Predicted monthly number of first births among 1000 women by cohort and status. *Solid lines* double status; *dashed line* employment only; *dash-dot line* enrolment only; *dotted line* neither enrolled nor employed. **a** Under exogenous enrolment. **b** Under endogenous enrolment and employment. *Notes:* The figures show predicted probabilities multiplied by 1000. The predictions in panel A) are calculated using the regression estimates presented in Table 7, column Model 2. The predictions in panel B) are calculated using the estimates presented in Table 8, column Model 2. The predictions are sample averages of observation-specific predicted probabilities. When calculating the observation-specific probabilities, the cohort and employment–enrolment status dummy variables are set at appropriate values while other covariates are left as they are in the dataset

women who are either employed or are in double-status positions. However, the gap between women who are only enrolled and women who are in double-status positions decreases as we move towards the youngest cohorts. Thus, even when employment increases first birth rates among enrolled women, the fertility behaviour of women in double-status positions seems to converge with that of women who are only enrolled. These findings support hypothesis H3b, namely that the decrease in first birth rates is larger among women in double-status positions than among women who are only enrolled or only employed.

Estimates for the joint model, which controls for the endogeneity of enrolment and employment, appear in Table 8.[10] The table displays the coefficients of the conception equation only. The coefficients of the respective enrolment and employment equations are in "Appendix" Tables 10 and 11. The relationship

[10] See Sect. 3.2 for the specification of the selection model and the estimation method.

between double status and enrolment only is the same as in our previous models: women who are only enrolled have a much lower risk of conception than those who are not only enrolled but also employed. The effect of employment only is positive and significant in Model 1, which does not include interaction effects. This means that the transition rate to motherhood is clearly lower among women in double-status positions than among their employed but not enrolled counterparts. In Model 2, however, the main effect of employment is not statistically significant. With one exception, the interactions among status and cohort categories lack statistical significance as well. Model 1 suggests that under the assumption of endogenous enrolment and employment, the fertility behaviour of women who are double status (employed and enrolled at the same time) differ sharply from both enrolled and employed women. More specifically, birth rates in double-status positions are lower than among employed but not enrolled women, but are larger than among enrolled but not employed women. These results support the mitigated role conflict hypothesis.

The hypothesised cohort effects are again examined using predicted probabilities, calculated from Model 2. The predicted monthly first birth rates are shown in Panel B of Fig. 3. The figure shows that compared to double-status positions, enrolled have fewer births, but this difference decreases as we move towards the younger cohorts. Employed women, however, have more births than women in double-status positions, but the magnitude of the difference seems to be constant across birth cohorts. Further calculations (not shown here) suggest that the fertility gap between enrolled women and women in double-status positions is significantly smaller in younger cohorts, while the decreasing difference between double-status positions and employment lacks statistical significance. Again, we find that the fertility behaviour of women in double-status positions seems to converge with that of women who are enrolled only. These findings support the hypothesis that the decrease in first birth rates is larger among women in double-status positions than among women who are only enrolled or only employed. Status differences are therefore smaller as we move towards younger cohorts.

The expansion of education in post-socialist Hungary was mainly driven by the expansion of higher education. In our sample, the observation period begins when a respondent turned 14. To improve the relationship between our problem formulation and empirical analyses and to focus on college and university students, we re-estimated the models presented in Tables 7 and 8 in two nested subsamples of the original sample. In the first subsample, the risk period starts when the respondent turns 18, the age at which young people often begin college or university studies. The second subsample includes those women from the first subsample who have upper secondary or higher education. We replicated the previous results reported in Tables 7 and 8 with one exception. This exception occurs in the subsample of women who are older than 18 and have at least upper secondary education: the positive conditional effect of employment lacks statistical significance among women born between 1966 and 1975. However, we still find that first birth rates are significantly higher in double-status positions than among the enrolled. Depending on the estimation method and the sample, the results support the mitigated role conflict and the job status dominance hypotheses. However, whatever estimation method and sample are used, the multiple role conflict hypothesis is never supported.

Table 8 Trivariate probit estimates of the conception equation of the joint model of conception, enrolment and employment

	Model 1		Model 2	
Employment–enrolment status				
Double status	0		0	
Employed only	0.120*	(2.245)	0.099	(1.548)
Enrolled only	−0.637***	(9.065)	−0.686***	(8.316)
Neither enrolled nor employed	0.003	(0.028)	−0.100	(0.808)
Birth cohort				
1961–1965	0		0	
1966–1970	−0.109***	(3.825)	−0.125*	(2.415)
1971–1975	−0.199***	(7.139)	−0.240***	(4.546)
1976–1983	−0.345***	(11.577)	−0.443***	(6.837)
Status X birth cohort				
Employed only X 1966–1970			−0.022	(0.346)
Employed only X 1971–1975			0.046	(0.717)
Employed only X 1976–1983			0.092	(1.269)
Enrolled only X 1966–1970			0.121	(1.483)
Enrolled only X 1971–1975			0.070	(0.814)
Enrolled only X 1976–1983			0.059	(0.653)
Neither enrolled nor employed X 1966–1970			0.107	(0.942)
Neither enrolled nor employed X 1971–1975			0.053	(0.497)
Neither enrolled nor employed X 1976–1983			0.245*	(2.373)
Educational level (time-varying)				
Primary or less	0		0	
Lower secondary	−0.067	(1.616)	−0.065	(1.558)
Upper secondary	−0.125***	(3.536)	−0.125***	(3.524)
Higher	−0.133**	(3.114)	−0.133**	(3.109)
Age 25	−0.009**	(2.975)	−0.009**	(2.882)
(Age 25) squared	−0.005***	(11.217)	−0.005***	(11.145)
Constant	−2.022***	(32.236)	−1.993***	(30.230)
Fisher transforms of the correlation of residuals				
Conception–enrolment equations	0.080**	(2.935)	0.081**	(2.997)
Conception–employment equations	−0.070*	(2.182)	−0.068*	(2.103)
Enrolment–employment equations	−0.631***	(23.931)	−0.631***	(23.930)
Wald Chi-squared	5524.268		5573.102	

Numbers in parentheses are absolute values of t statistics. Standard errors are adjusted for clustering on persons

Number of person-months = 324,811. Number of individuals = 2462. Number of conceptions = 1823

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Although we are primarily interested in examining the effect of participation in education, we note that the level of education is also found to have an effect on the transition to motherhood. Specifically, we find that the first birth rate is lower among

women with upper secondary and higher education than among women with primary and lower secondary education. This difference seems to support the negative educational gradient assumption. However, there is no evidence that the fertility behaviour of college educated women is different from that of women with upper secondary education.

5 Conclusions

Studies of fertility often assume that there is an incompatibility between education and motherhood in modern societies. However, previous research has not paid much attention to the presence of double-status positions and part-time forms of participation in education (Wolbers 2003; Róbert and Saar 2012). The central claim of our paper is that the existence of double-status positions calls for a re-assessment of the assumption that participation in education is incompatible with motherhood. On the one hand, the conflict between being a student and being a mother might be even more pronounced if one is also employed at the same time, since allocating sufficient time to studies, employment and childcare is too demanding and conflicting (the multiple role conflict hypothesis). On the other hand, due to the presence of wage income and, more importantly, the absence of normative expectations regarding the sequencing of life-course events, employment status might mitigate the conflict between the seemingly contradictory social roles of being a student and being a mother at the same time (the mitigated role conflict and the job status dominance hypotheses).

In this paper, we examined the relationship between double-status positions and the transition to motherhood in Hungary, where educational expansion went hand in hand with the expansion of part-time (and paid) educational programmes. Our findings can be summarised as follows. First, the hazard of first birth was lowest among those who were enrolled and those who were enrolled but not employed. This finding is consistent with the classical Blossfeld and Huinink hypothesis. Second, the conception hazard of women in double-status positions was significantly higher than that of women who were enrolled only. Finding a robust difference in the conception hazard between women in double-status positions and women who were only enrolled implies that double-status positions mitigate the conflict between being a student and being a mother. The fact that first birth rates were smallest among women who were enrolled but not employed suggests that being a mother and a (full-time) student is incompatible. We also found evidence that the difference in first birth rates between women in double-status positions and women who were only enrolled decreased as we moved towards younger birth cohorts.

There was mixed evidence on the difference in the fertility behaviour between women in double-status positions and women who were only employed. Evidence from the statistical models, which assumed exogenous participation in education and exogenous employment, was rather inconclusive, since the effect of pure employment lacked statistical significance compared to women in double-status positions. By contrast, the models assuming endogenous enrolment and employment

provided some evidence that the first conception hazard was lower among women in double-status positions than among women who are employed only. These findings support the job status dominance and the mitigated role conflict hypotheses, respectively.

Our results stand in contrast to the assumption that it is very difficult to be a student, an employee and a mother at the same time. The low level of that incompatibility in double-status positions can be explained as follows. First, recall that most of the women in double-status positions participated in part-time educational programmes, while enrolled women (who did not work) participated mainly in full-time programmes. The first explanation of the similarity in the fertility behaviour between employees and women in double-status positions is that part-time enrolled students do not have to spend much time on their studies. Unfortunately, we could not test this explanation because we did not have data on the actual time use of either students or respondents in our sample. Second, people in double-status positions were often employees who started to participate in a new educational programme in order to either stabilise or improve their career prospects. As employees, they found the social norms regarding the sequencing of life-course events irrelevant. Third, the interruption of studies does not incur relatively large costs, because people in double-status positions have already completed a period of education. Finally, the Hungarian parental leave system guarantees a well-compensated and long spell of parental leave, and the incompatibility of different social roles might therefore be lower than expected, especially if one of the parents participates in a part-time education programme.

These explanations are in line with previous suggestions that the transition to adulthood (and parenthood) is contingent on the labour market (Mayer 2001), institutions shaping the school-to-work transitions (Buchmann and Kriesi 2011) and the welfare regime, which incorporates the parental leave system (Mayer 2001; Mills 2007). The decline in first birth rates among women in double-status positions in Hungary can be explained by institutional changes during the post-communist transition. Skill-biased technological changes and the associated increase in competition for good jobs created incentives to upgrade skills and qualifications. The growing demand for additional educational qualifications was met with an increase in part-time education programmes. The increased importance of obtaining new qualifications and holding on to a job implies the increase in wage penalty and the decrease in first birth rates in double-status positions.

This explanation is, at best, suggestive and has two obvious limitations. First, it focuses on double-status positions which arise among employees. However, the growing uncertainty of the school-to-work transitions and the related increase in the demand for traineeships implies that double-status positions should also be more frequent among (full-time) students. Second, it does not examine the societal meanings attached to double-status positions. Double-status positions are present and may be on the increase in other post-communist countries as well as in Western societies (Wolbers 2003; Darmody and Smith 2008; Beerkens et al. 2011; Róbert and Saar 2012). Further research needs to examine the effect of institutional factors on the relationship between double-status positions and fertility in different societal contexts.

Educational expansion is thought to be one of the driving forces of the postponement of births (Ní Bhrolcháin and Beaujouan 2012). Although we did not examine that relationship empirically, our findings suggest that the effect of educational expansion is conditional on the share of part-time educational programmes, since participation in a part-time educational program is more easy to be combined with employment. Future research should examine the implications of double-status positions on the relationship between educational expansion and fertility postponement.

Acknowledgments We would like to thank the anonymous referees for helpful comments and suggestions. The research was supported by the grant "Mapping Family Transitions: Causes, Consequences, Complexities, and Context" (No. K 109397) of the Hungarian Science and Research Foundation (OTKA). Bartus also received financial support from the János Bolyai Scholarship of the Hungarian Academy of Sciences.

Appendix

See Tables 9, 10 and 11.

Table 9 Means of enrolment status and human capital characteristics by employment–enrolment status and birth cohorts

Variable	Double status	Employed only	Enrolled only	Neither enrolled nor employed
Birth cohort 1961–1965				
Part-time enrolment	0.81	0	0.05	0
Age	22.77	25.23	16.91	22.28
Age group				
14–20	0.38	0.34	0.91	0.58
21–25	0.40	0.31	0.08	0.17
26–30	0.13	0.13	0.01	0.07
31+	0.09	0.21	0.00	0.17
Education				
Primary or less	0.12	0.17	0.82	0.62
Lower secondary	0.18	0.29	0.02	0.13
Upper secondary	0.54	0.37	0.17	0.22
Higher	0.16	0.16	0.00	0.04
Experience	3.59	6.24	0.07	1.18
Birth cohort 1965–1970				
Part-time enrolment	0.85	0	0.06	0
Age	22.24	25.50	17.06	24.16

Table 9 continued

Variable	Double status	Employed only	Enrolled only	Neither enrolled nor employed
Age-group				
14–20	0.43	0.26	0.90	0.41
21–25	0.36	0.32	0.09	0.20
26–30	0.16	0.18	0.01	0.16
31+	0.06	0.24	0.00	0.23
Education				
Primary or less	0.15	0.12	0.80	0.45
Lower secondary	0.29	0.29	0.01	0.18
Upper secondary	0.41	0.33	0.18	0.26
Higher	0.15	0.26	0.01	0.12
Experience	3.48	6.10	0.10	2.59
Birth cohort 1971–1975				
Part-time enrolment	0.84	0	0.09	0
Age	22.97	24.66	17.41	22.85
Age group				
14–20	0.34	0.26	0.86	0.43
21–25	0.38	0.34	0.13	0.25
26–30	0.23	0.24	0.02	0.18
31+	0.05	0.17	0.00	0.15
Education				
Primary or less	0.12	0.12	0.74	0.35
Lower secondary	0.27	0.26	0.04	0.25
Upper secondary	0.42	0.38	0.20	0.28
Higher	0.18	0.24	0.02	0.12
Experience	3.71	5.02	0.12	1.37
Birth cohort 1975–1983				
Part-time enrolment	0.74	0	0.06	0
Age (time-varying)	22.66	24.21	17.94	21.50
Age group				
14–20	0.27	0.16	0.80	0.44
21–25	0.55	0.47	0.18	0.38
26–30	0.17	0.34	0.01	0.16
31+	0.01	0.03	0.00	0.01
Education				
Primary or less	0.06	0.05	0.64	0.27
Lower secondary	0.15	0.22	0.04	0.16
Upper secondary	0.45	0.32	0.28	0.34
Higher	0.33	0.40	0.04	0.22
Experience	2.18	3.39	0.06	0.90

Table 10 Trivariate probit estimates of the enrolment equation of the joint conception–enrolment models

	Model 1		Model 2	
Birth cohort				
1961–1965	0		0	
1966–1970	0.146	(1.218)	0.146	(1.219)
1971–1975	−0.047	(0.429)	−0.047	(0.429)
1976–1983	0.118	(1.141)	0.119	(1.142)
Educational level (time-varying)				
Primary or less	0		0	
Lower secondary	−1.045***	(5.974)	−1.045***	(5.973)
Upper secondary	−0.382**	(2.656)	−0.382**	(2.656)
Higher	−0.530	(1.727)	−0.530	(1.726)
Age-25	−0.117***	(21.486)	−0.117***	(21.486)
(Age-25) squared	0.003***	(6.145)	0.003***	(6.145)
Father's education				
Primary or less	0		0	
Lower secondary	0.299***	(4.299)	0.299***	(4.299)
Upper secondary	0.424***	(5.391)	0.424***	(5.391)
Higher	0.653***	(6.279)	0.653***	(6.279)
Mother's education				
Primary or less	0		0	
Lower secondary	0.287***	(4.344)	0.287***	(4.344)
Upper secondary	0.527***	(7.773)	0.527***	(7.773)
Higher	0.702***	(7.173)	0.702***	(7.173)
Number of siblings				
0	0		0	
1	−0.076	(1.158)	−0.077	(1.158)
2 and more	−0.334***	(4.472)	−0.334***	(4.472)
Birth cohort X educational level				
1966–1970 X lower secondary	0.023	(0.093)	0.023	(0.093)
1966–1970 X upper secondary	−0.289	(1.568)	−0.289	(1.569)
1966–1970 X higher	−0.631	(1.870)	−0.631	(1.871)
1971–1975 X lower secondary	0.246	(1.135)	0.246	(1.135)
1971–1975 X upper secondary	−0.204	(1.157)	−0.204	(1.158)
1971–1975 X higher	−0.418	(1.298)	−0.418	(1.298)
1976–1983 X lower secondary	−0.219	(1.074)	−0.219	(1.074)
1976–1983 X upper secondary	−0.237	(1.483)	−0.237	(1.484)
1976–1983 X higher	−0.758*	(2.450)	−0.759*	(2.451)
Constant	−0.390***	(3.370)	−0.390***	(3.370)

Numbers in parentheses are absolute values of t statistics. Standard errors are adjusted for clustering on persons

Number of person months = 324,811. Number of individuals = 2462

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 11 Trivariate probit estimates of the employment equation of the joint conception–enrolment models

	Model 1		Model 2	
Birth cohort				
1961–1965	0		0	
1966–1970	0.050	(0.398)	0.050	(0.397)
1971–1975	0.086	(0.686)	0.086	(0.686)
1976–1983	−0.474***	(3.916)	−0.474***	(3.917)
Educational level (time-varying)				
Primary or less	0		0	
Lower secondary	1.570***	(9.005)	1.570***	(9.005)
Upper secondary	1.004***	(7.310)	1.004***	(7.310)
Higher	1.854***	(10.210)	1.853***	(10.210)
Age-25	0.101***	(16.082)	0.101***	(16.083)
(Age-25) squared	−0.008***	(14.997)	−0.008***	(14.997)
Father's education				
Primary or less	0		0	
Lower secondary	−0.141*	(2.076)	−0.141*	(2.076)
Upper secondary	−0.294***	(3.718)	−0.294***	(3.717)
Higher	−0.463***	(5.326)	−0.463***	(5.326)
Mother's education				
Primary or less	0		0	
Lower secondary	−0.108	(1.621)	−0.108	(1.621)
Upper secondary	−0.193**	(2.911)	−0.193**	(2.910)
Higher	−0.569***	(6.592)	−0.569***	(6.592)
Number of siblings				
0	0		0	
1	0.142*	(2.270)	0.142*	(2.270)
2 and more	0.294***	(4.100)	0.294***	(4.100)
Birth cohort X educational level				
1966–1970 X lower secondary	−0.020	(0.078)	−0.019	(0.078)
1966–1970 X upper secondary	−0.147	(0.825)	−0.147	(0.825)
1966–1970 X higher	−0.423	(1.929)	−0.423	(1.928)
1971–1975 X lower secondary	−0.508*	(2.277)	−0.508*	(2.276)
1971–1975 X upper secondary	−0.214	(1.290)	−0.214	(1.290)
1971–1975 X higher	−0.640**	(2.952)	−0.640**	(2.952)
1976–1983 X lower secondary	−0.096	(0.474)	−0.096	(0.474)
1976–1983 X upper secondary	−0.171	(1.104)	−0.171	(1.103)
1976–1983 X higher	−0.339	(1.791)	−0.339	(1.791)
Constant	0.134	(0.992)	0.134	(0.992)

Numbers in parentheses are absolute values of t statistics. Standard errors are adjusted for clustering on persons

Number of person-months = 324,811. Number of individuals = 2462

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

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