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# Educational expansion, „double status positions” and the transition to motherhood in Hungary

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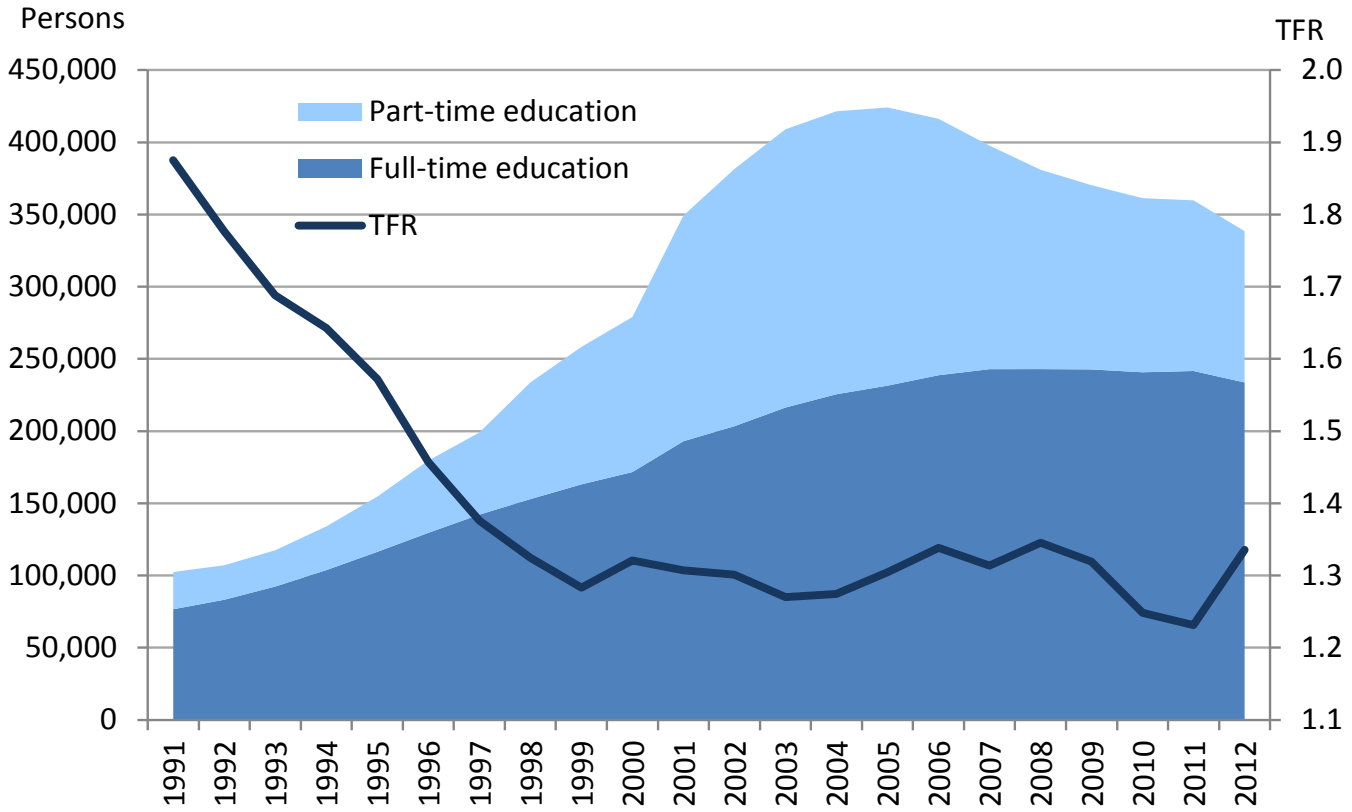
# Expansion of part-time education




Vertical axis (left): number of people participating in education

Light blue: part-time

Dark blue: full-time

Vertical axis (right): TFR

Source: Official Educational Statistics, Vital statstitics

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# Presence of double status positions

Part-time enrolled are likely to be employed as well – double status positons.

Some evidence from the Hungarian GGS (data source will be described later)

| Participation in education | % of not employed | % of employed |
|---|---|---|
| full-time | 95.53 | 4.47 |
| part-time | 25.23 | 74.77 |
| not participating | 21.38 | 78.62 |

These are %s calculated across person-months

# Questions we wish to answer empirically

- What are the implications of double status positions for the transition to first births?
  - We already know that participation in education is incompatible with childbearing (Blossfeld and Huinink 1991)
  - There is however mixed evidence on the effect of employment on the transition to motherhood
- Is the transition to motherhood even slower among women in double status positons than among those enrolled only?
  Or does it mitigate the conflict between being a student and being a mother?
- Does period changes the magnitude of the effects?

# Two perspectives on the costs of childbearing

**Two components of costs among students and employees**

| Component | Students | Employees |
|---|---|---|
| Social disapproval | + Students not "ready" for motherhood | 0 Employment compatible with motherhood |
| Wage penalty | + Late entry into labor market | + Career interruption |

Let us try to apply these perspectives to double status positions.....

# Multiple role conflict hypothesis

Assumption: in double status positions, characteristics of enrolment and employment statuses simply add up.

| Costs and fertility outcome | Students | + | Employees | = | Double status |
|---|---|---|---|---|---|
| Social disapproval | + | | 0 | | + |
| Wage penalty | + | | + | | ++ |
| Total | ++ | | + | | +++ |
| Expected fertility | “low” | | “high” | | “lowest low” |

# Mitigated role conflict hypothesis

Assumption: in double status positions, employment status is the dominant one, which suppresses the characteristics of enrolment status

| Costs and fertility outcome | Students | Employees | Double status |
|---|---|---|---|
| Social disapproval | + | 0 | 0 |
| Wage penalty | + | + | + |
| Total | ++ | + | + |
| Expected fertility | “low” | “high” | “high” |

# Data and variables

- Hungarian GGS (2001, 2004, 2008)
  - Panel data with retrospective birth, employment and educational histories
  - We have independent information on employment and enrolment statuses
- Sample: women born 1961-1983 (N=2462)
- Person-month dataset (324,811 records, 1020 conceptions, risk period starts when turning 14)
- Explanatory variables (in principle time-varying)
  - separate as well as combined categories of employment and enrolment
  - birth cohort categories (1961-65, 1966-70, 1971-75, 1976-83)
  - interactions among the status and cohort dummies
  - educational attainment (4 categories); age, age-squared

# Composition of status categories

Means of selected variables in the person-month dataset

| Variable | double status | employed only | enrolled only | other |
|---|---|---|---|---|
| Part-time enrolment | 0.81 | 0 | 0.06 | 0 |
| Age (time-varying) | 22.67 | 24.76 | 17.51 | 22.37 |
| Age group | | | | |
| 14-20 | 0.35 | 0.23 | 0.85 | 0.46 |
| 21-25 | 0.42 | 0.38 | 0.14 | 0.29 |
| 26-30 | 0.18 | 0.25 | 0.01 | 0.15 |
| 31+ | 0.05 | 0.14 | 0.00 | 0.10 |
| Education | | | | |
| primary or less | 0.11 | 0.10 | 0.72 | 0.37 |
| lower secondary | 0.23 | 0.26 | 0.03 | 0.18 |
| upper secondary | 0.45 | 0.35 | 0.23 | 0.29 |
| higher | 0.21 | 0.29 | 0.02 | 0.15 |

# How do we test the hypotheses and present results?

- Discrete-time event-history analysis / single-level logistic regression of conceptions using person-month data. (SEs adjusted for clustering on persons)
- We proceed in two steps, estimating the effect of
  1. separate enrolment and employment statuses
  2. combinations of the employment-enrolment statuses ( in order to assess the effect of double status positions)
- In all steps, we
  - also include the interactions between status and cohort categories
  - control for birth cohort, educational level, age + age squared
  - display the effects of statuses conditional on birth cohort

# Step 1: Effects of separate enrolment and employment statuses

Effects conditional on birth cohorts:

| | 1961-1965 | 1966-1970 | 1971-1975 | 1976-1983 |
|---|---|---|---|---|
| Employment | 1.011*** | 0.538** | 0.816*** | 0.227 |
| | (4.897) | (2.677) | (3.923) | (1.180) |
| Enrolment | -0.227 | -0.263 | -0.465** | -1.219*** |
| | (1.412) | (1.537) | (2.749) | (5.320) |

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

- These conditional effects are linear combinations of the main effect of enrolment and the interaction between enrolment and the respective cohort
- The underlying regresison model includes education, age and the square thereof as well

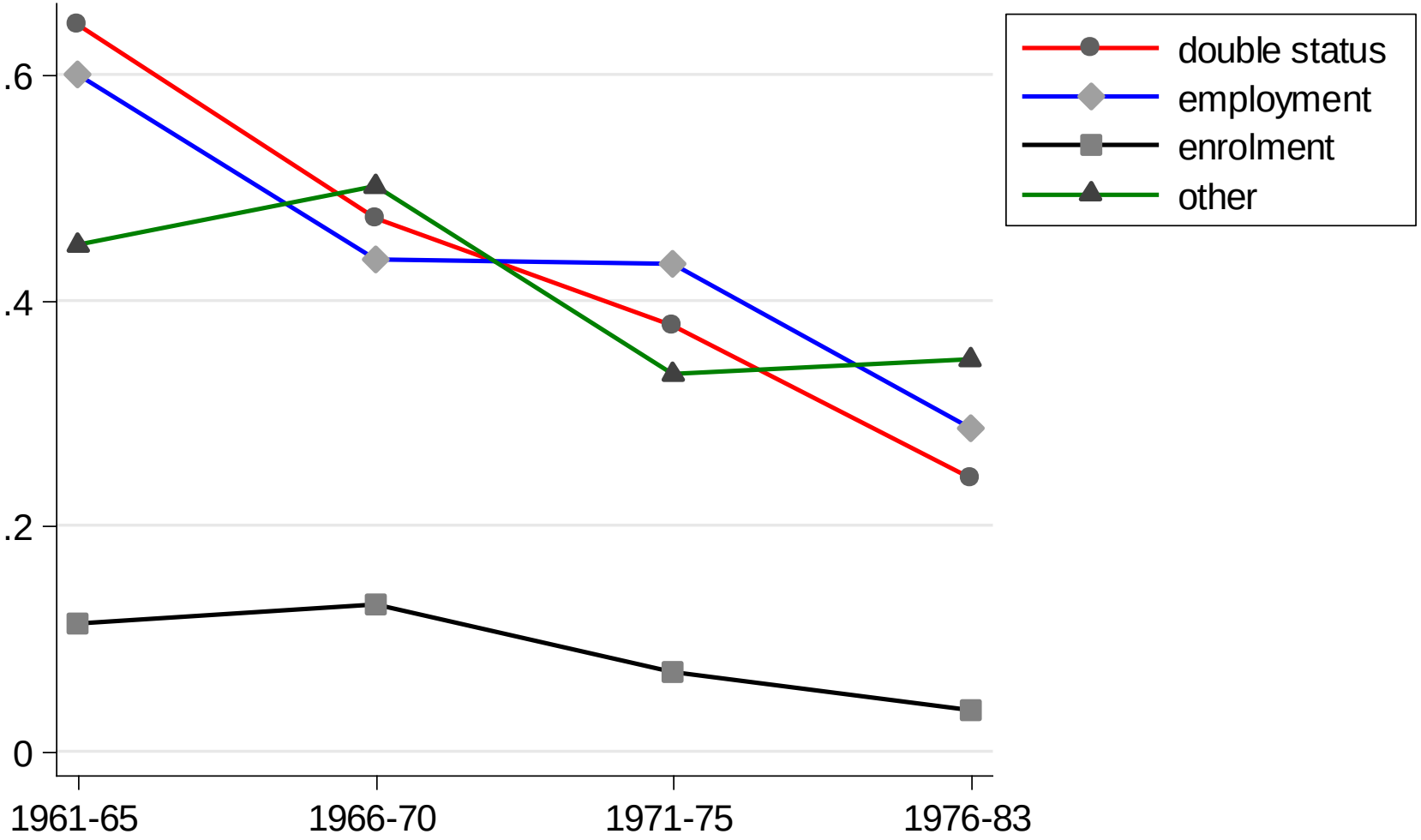
# Step 2: Effects of combined employment-enrolment statuses

**Reference category: double status position.**

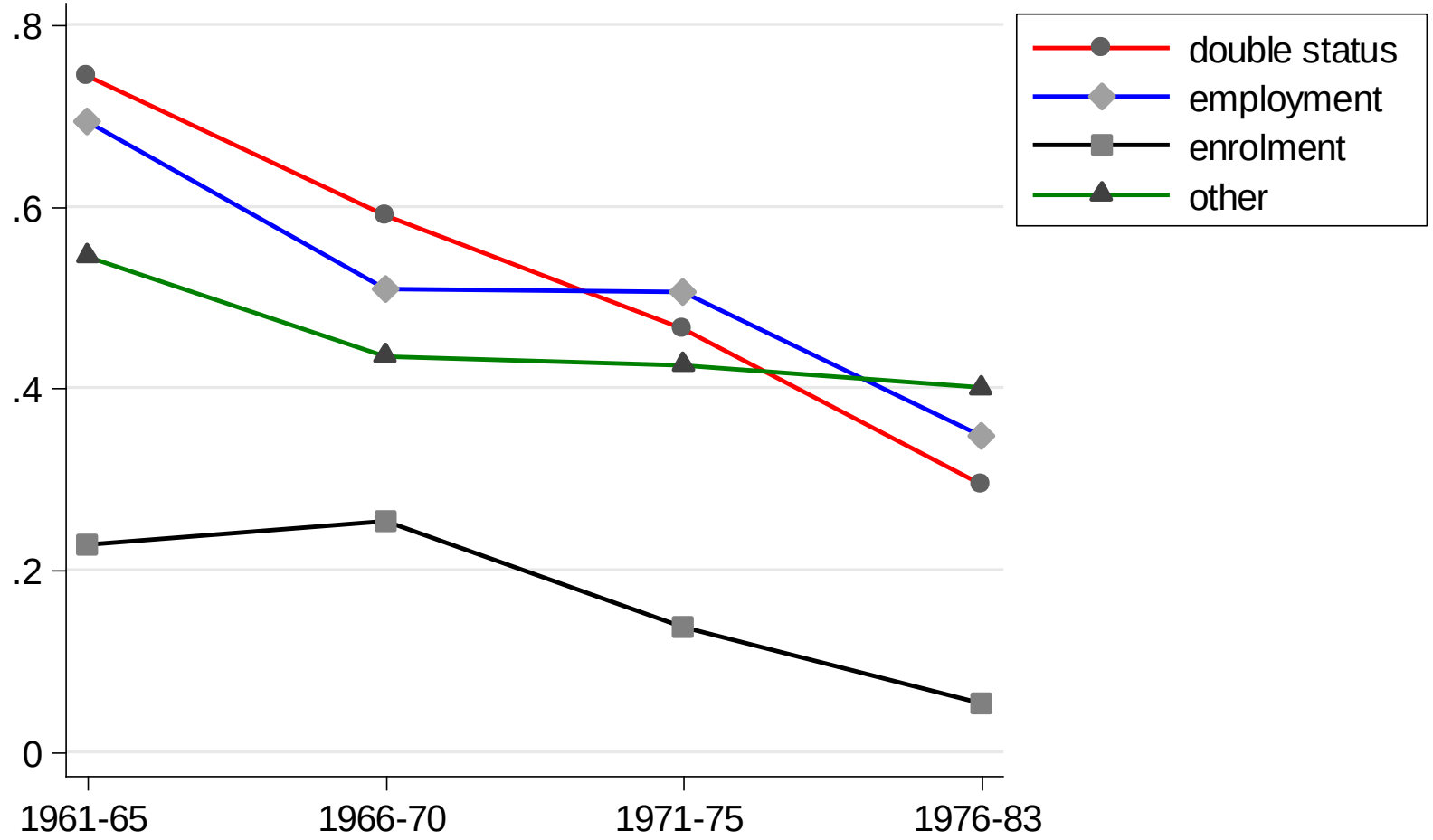
| | 1961-1965 | 1966-1970 | 1971-1975 | 1976-1983 |
|---|---|---|---|---|
| Employment only | -0.071 | -0.082 | 0.138 | 0.169 |
| | (0.467) | (0.513) | (0.864) | (0.816) |
| Enrolment only | -1.748*** | -1.292*** | -1.677*** | -1.891*** |
| | (7.121) | (5.312) | (5.838) | (6.264) |

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

# Predicted probability (%) of conception in a given month

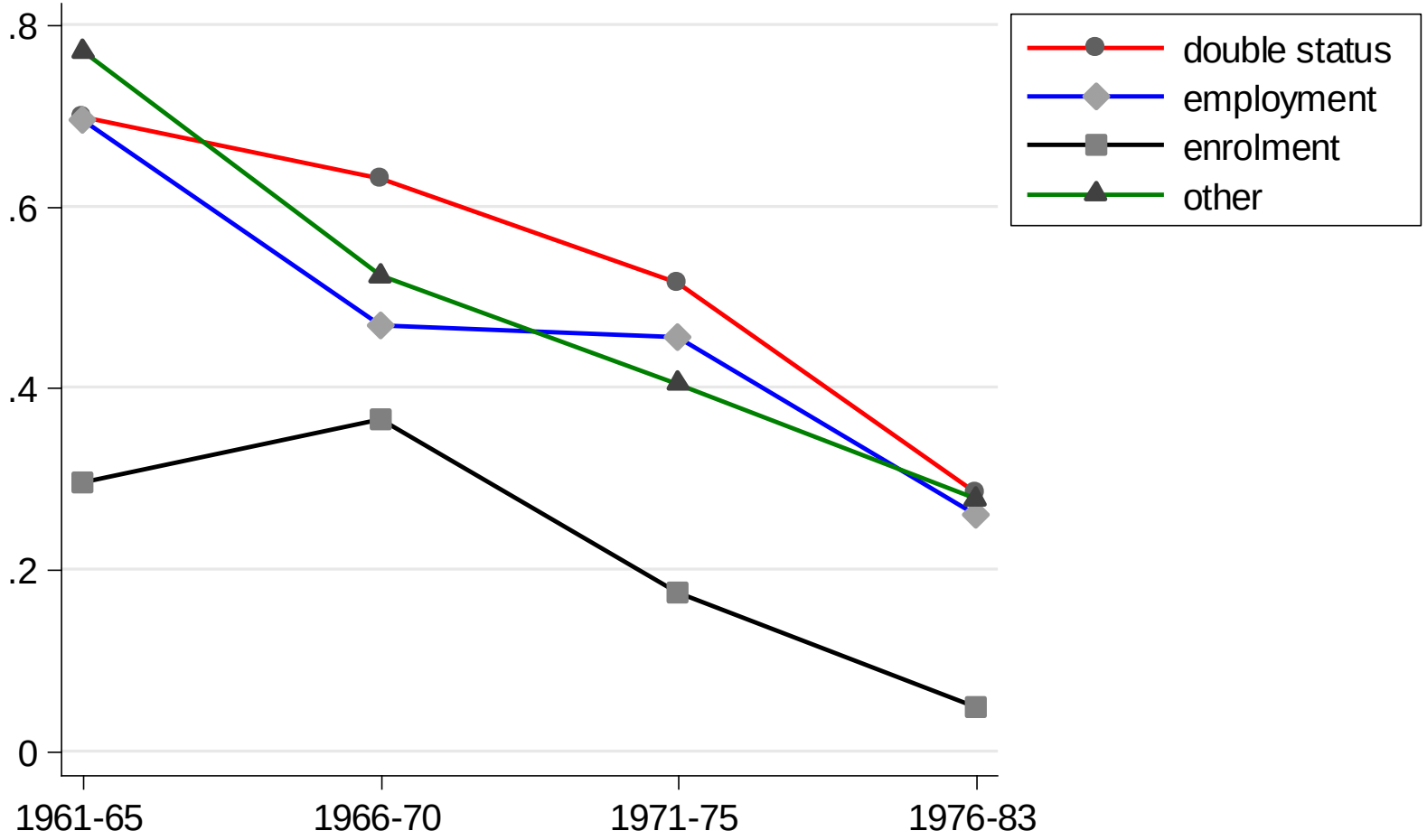


# We get similar results in the sample of women aged 18+




Probabilities in a given month, displayed in percentage form

# … and among women with at least upper secondary education




Probabilities in a given month, displayed in percentage form

# What if enrolment is endogeneous?

- Enrolment is not given but chosen: women might prefer participation in education in order to delay the transition to motherhood.
- To account for endogeneity of enrolment, we estimate a bivariate probit model
- Birth equation: the same explanatory variables as before
- Enrolment equation:
  - cohort, education, interaction between cohort and education, age and square thereof,
  - father's and mother's education (when R was 14), # of siblings as excluded instruments

# What if enrolment is endogeneous?

Effects conditional on birth cohorts:

**Reference category: double status position.**

| | 1961-1965 | 1966-1970 | 1971-1975 | 1976-1983 |
|---|---|---|---|---|
| Employment only | 0.124 | 0.122 | 0.196* | 0.204* |
| | (1.656) | (1.567) | (2.603) | (2.365) |
| Enrolment only | -0.573*** | -0.405*** | -0.506*** | -0.531*** |
| | (7.372) | (5.202) | (5.828) | (5.883) |

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

# Conclusions and discussion

- Participation in education has a negative effect which increased over time
- Double status also matters:
  - transition to motherhood between women in double status positions is more likely than among those enrolled only.
  - difference between double status positions and employment not robust
- Conclusion: the negative fertility effect of educational expansion is somewhat over-stated in the literature
- Open question: can our results be generalized? Or do they pick up the specificities of the Hungarian setting only?