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The long and winding road to women's work-family reconciliation in Spain

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- We study monthly transitions from employment to non–employment around the birth of the first child.
- The observation window covers 10 months before confinement and between 36 and 86 months afterwards.
- Hence, we focus on labor market attachment:
  - throughout pregnancy of the first child and
  - up to 7 years following confinement.
- Total period covered: 2005–2012.

Introduction. The Why

- Because we update the literature on women's labor market status around childbirth in Spain to cover the 2005–12 period.
  - The most recent contribution covers the 2001–4 period only: `Herrarte, Moral-Carcedo, and Sáez (2012)`
  - But most authors analyze data up to the year 1997 only:
    - `Adam (1996)`
    - `Alba and Alvarez (2004)`
    - `Alba, Alvarez, and Carrasco (2009)`
    - `Gutiérrez-Domènech (2005)`

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- Because we analyze data with:
  - unique precision (monthly);
  - unique time extension: 46 months for a given individual, 8 years overall (from 2005 to 2012).
- By contrast, previous work typically uses the panel version of the LFS, which has:
  - Quarterly precision;
  - Only 18 months of continuous observation.

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- Previous work found that only women with tertiary education kept their labor market attachment after confinement.
- Throughout 2005 and 2012 female work–rates declined from 55% to 50% as the crisis deepened.
- Has the crisis affected women's polarization by educational achievement in terms of their ability to reconcile the competing demands of family and work around the birth of their first child?

Data

- 'Muestra Continua de Vidas Laborales' (MCVL) or 'Longitudinal sample of working live histories.'
- Individual administrative records of:
  - employment history (from the Social Security system),
  - local administration data (residence data),
- Sample: $5,319$ women aged 16 to 50 who give rise to $n = 200,768$ episodes in the period 2005–2012.

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Key constraint: We can only observe a person in a given calendar year if she is in the Social Security system. Hence,

- In each year of the period 2005–2009 we select those women who:
  - gave birth in either November or December.
  - were in work 10 months earlier, i.e., in January or February.
- We are able to observe exits from employment to non–employment in:
  - the 10–month period prior to delivery and
  - up to 86 months after delivery (7 years and 2 months).
- Overall we study women's exits from employment around the birth of the first child throughout the period from 2005 to 2012.

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- Event History Analysis (EHA) ...
- To estimate the probability λ_i of becoming non–employed, conditional on survival to time t_i and covariates $\mathbf{x}$ ...
- with the logit model for discrete (monthly) time data, where the probability λ_i is calculated with the well–known logistic regression model:

$$\hat{\lambda}_i = \frac{e^{\beta' \mathbf{x}}}{1 + e^{\beta' \mathbf{x}}}$$

to which we can apply the logit transformation:

$$g(x) = log\left(\frac{\lambda}{1-\lambda}\right) = \beta' \mathbf{x}$$

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Kaplan–Meier survival estimates

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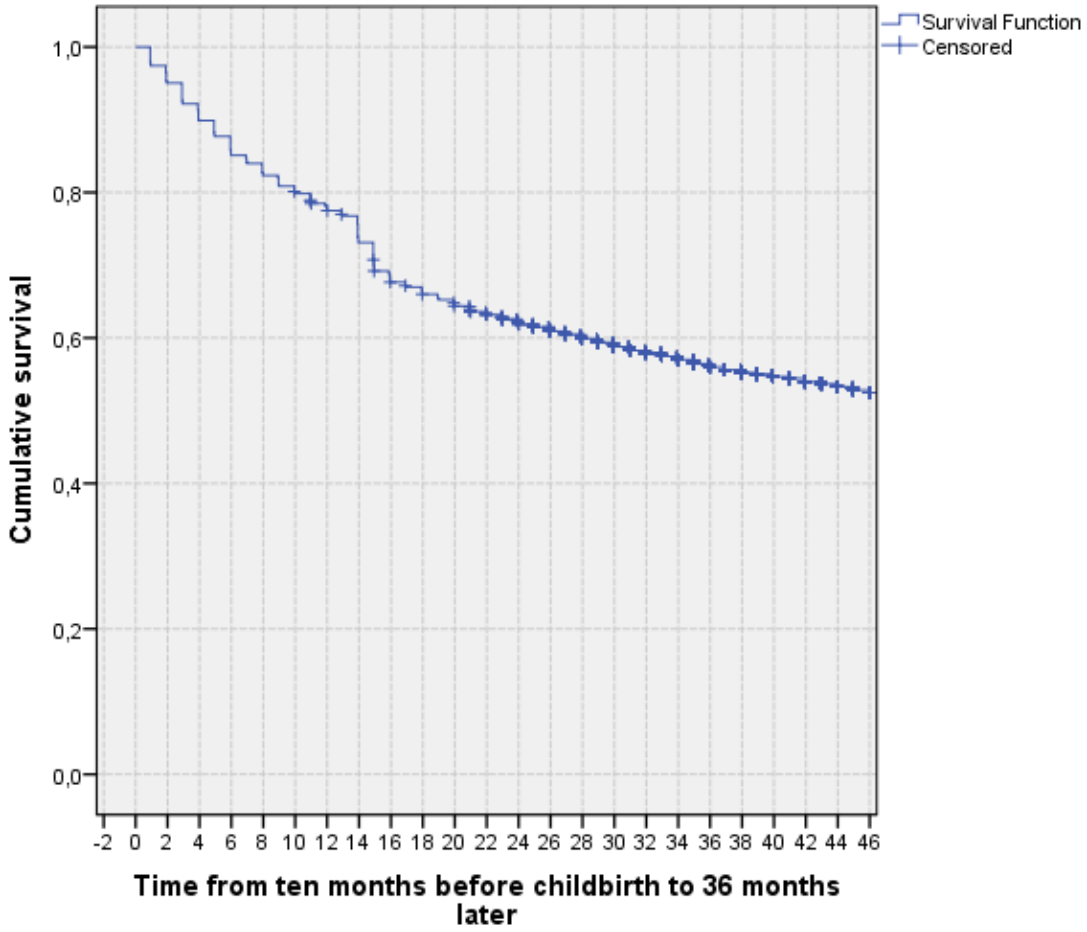

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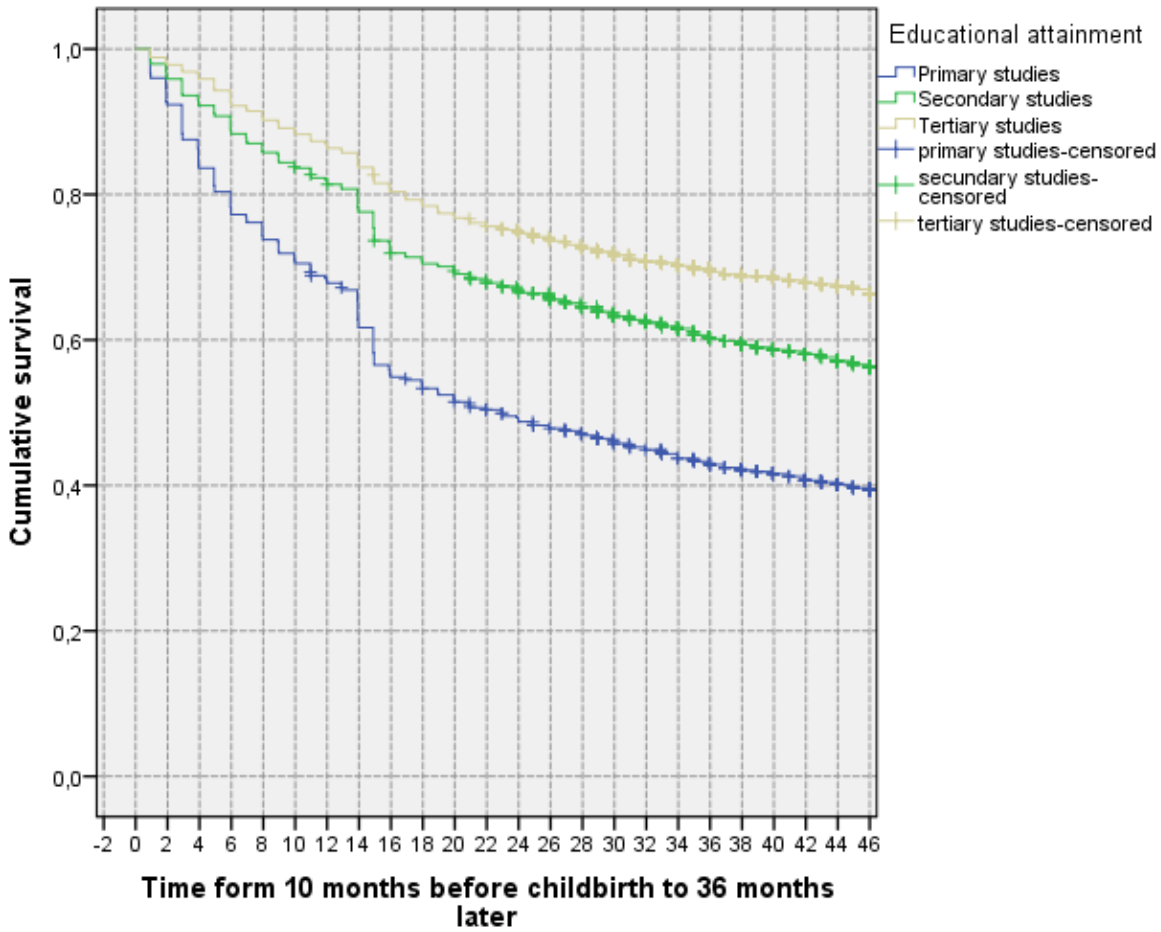
Kaplan–Meier survival estimates, by education



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	Model 1	Model 2	Model 3
age	-0.26***	-0.00	-0.00
age^2	0.00***	0.00	0.00
foreign	0.69***	0.29***	0.29**
grandpa	0.12*	0.08	0.08
education2	-0.24***	-0.22***	-0.28**
education3	-0.48***	-0.54***	-0.80**
pregnancy2		0.34***	0.22**
child-under 4months		0.56***	0.57**
child-under 3 years		0.30***	0.23**
child-over 3 years		-0.00	-0.06
education2 $\times$ pregnancy2			0.14
education3 $\times$ pregnancy2			0.52**
education2 $\times$ child–under 4months			-0.05
education3 $\times$ child–under 4months			0.18
education2 $\times$ child–under 3 years			0.09
education3 $\times$ child–under 3 years			0.28
education2 $\times$ child–over 3 years			0.08
education3 $\times$ child–over 3 years			0.28

Modeling (continued)

- Adding work and job–related controls (models 2 and 3):
  - Makes the effects of age and presence of grandparents wither away and reduces the effect of nationality, but
  - Educational attainment remains as the strongest individual characteristic affecting the probability of employment exit.
  - The first months after delivery are the critical period for women's permanency in employment:
    - exit from work is $\mathrm{e}^{(0.56)} = 1.75$ times as likely than in the first months of pregnancy (see model 2).
  - Until age 3 there remains a higher risk of exit than in the first months of pregnancy.

Modeling—the interaction

- The higher the human capital investment, the lower the risk of exit is.
- But this effect is not constant over all the periods surrounding delivery.
  - In the 2nd part of the pregnacy the odds of exit are $e^{(-0.80+0.52)} = 0.76$ times as likely among graduates than among people with primary schooling or less in that case.
  - Instead, the odds of labor market exit are much lower among graduates at other times:
    - $e^{(-0.80+0.18)} = 0.54$ as likely when the child is aged 0 to 4 months.
    - $e^{(-0.80+0.28)} = 0.60$ as likely when the child is 5 months old or older.

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- For high–schoolers, the odds of exit are closer to those of women with primary education, and vary little over the whole period around birth:
  - $e^{(-0.28+0.14)} = 0.87$ as likely in the 2^{nd} part of the pregnancy.
  - $e^{(-0.28-0.05)} = 0.72$ as likely when the child is 0 to 4 months old.
  - $e^{(-0.28+0.09)} = 0.83$ as likely when the child is 5 months old up to age 3.
  - $e^{(-0.28+0.08)} = 0.82$ as likely when the child is older than 3.

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	Model 1	Model 2	Model 3
fixed–term contract		1.73***	1.78***
self–employed		-2.18***	-2.21***
part–time		0.12**	0.13**
public sector		-0.67***	-0.69***
experience		-0.08***	-0.08***
moonlighting		-2.10***	-2.10***
size2		-0.08	-0.08
size3		-0.31***	-0.30***
size4		-0.52***	-0.52***
occ2		-0.20***	-0.20***
occ3		-0.53***	-0.53***
occ4		-0.60***	-0.62***
crisis			0.04
unemployment			-0.00

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- All work and job–related controls are statistically significant and follow the expected direction.
- The unemployment rate in one's region increases women's attachment to paid work around the birth of their first child, but its effect is not significant.
- In the period of crisis the chances of moving to non–employment increase but this effect is, surprisingly, not significant either.

Conclusions

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- The risk of exit increases around the time of delivery and up to when the child turns 3.
- This finding confirms the heavy selection problem faced by studies of labor market transitions in the months around the time of delivery.
- After age 3 (when schooling is freely provided) the difference in the risk of exit vs. the early period of pregnancy disappears.

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- In recent years the differences by educational attainment among women remain in terms of their ability or willingness to reconcile paid work and childbearing.
  - However, we have noted that the risk of exit among women of various educational levels come close in the 2nd part of pregnancy.
- Women's polarization by educational achievement in the labor market was first observed in the 1980s, when there was the first noticeable upsurge in women's work rates, so the road to reconciliation is getting longer and longer for women without college education.

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