empirical and quantitative methods graduate school of economic & social sciences

UNIVERSITÄT MANNHEIM

The Male Marital Wage Premium: Further Results on an Enduring Puzzle

Josef Brüderl

Volker Ludwig

Workshop: Rational Choice Sociology

Venice International University

San Servolo

02/12/2009

The Male Marital Wage Premium

UNIVERSITÄT MANNHEIM

- Married men earn more than unmarried men
  - Marital wage premium (MWP)
  - "… one of the most well documented phenomena in social science" (Waite & Gallagher 2000: 99)
- Early studies used cross-sectional data
  - Self-selection: high wage men more attractive marriage partners
- However, also recent longitudinal studies find a MWP
  - Ahituv/Lerman (2007) Demography
    NLSY79, FE (fixed-effects) regression: 7.6 %
  - Barg/Beblo (2007) Schmollers Jahrbuch
    SOEP 1992-2004, PS matching: 3.6 %
  - Pollmann-Schult/Diewald (2007) KZfSS
    SOEP 1984-2004, FE regression: 1.9 %

Is There Really a MWP?

UNIVERSITÄT MANNHEIM

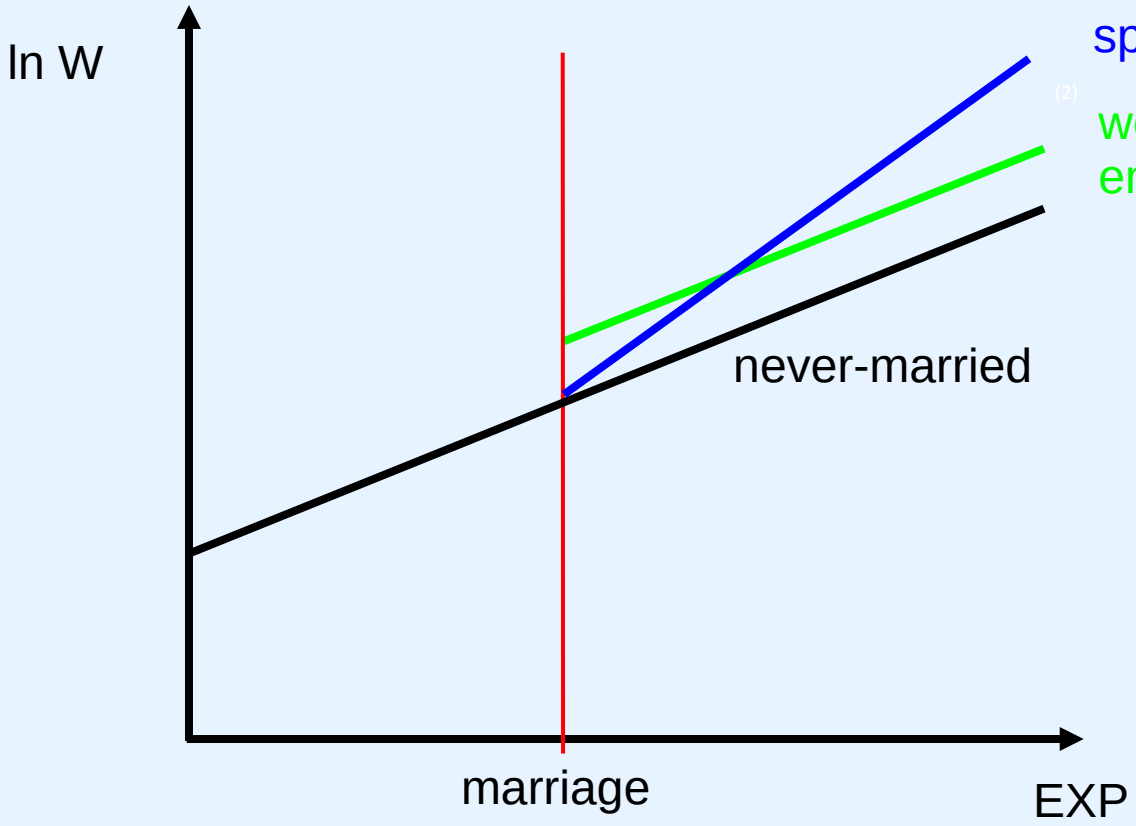
- Thus, marriage makes men more productive workers
  - Remark: Not the effect on labor hours, but the effect on productivity (gross hourly wage rate)
- We are not convinced: we introduce three innovations
- Taking the theory seriously
  - Theories imply certain time paths of the MWP
    1. How develops the MWP over the duration of a marriage?
  - Theories imply effects for separation and remarriage
    2. What are the effects of separation and remarriage?
- Methodological improvement
  - Self-selection may operate on wage growth (not only on level)
  - Can be controlled for by FE-IS (fixed-effects individual slopes)
    3. How high is the MWP when using FE-IS?

Explanations for a Causal MWP

UNIVERSITÄT MANNHEIM

- Family Economics (Becker 1981)
  - Precondition: there is a traditional division of labor
  - Married men specialize on market work
    They accumulate more market specific skills — specialization
  - Married women specialize on household work
    Married men are released from strenuous housework
    They can put more effort in their market work — work effort
- Lifestyle explanation
  - After marriage men are domesticated by their wives — domestication
- Demand side explanation
  - Paternalism of employers — employer favoritism
    - Prominent example: marriage premium for German public sector workers (*Familien-, Ortszuschlag*)

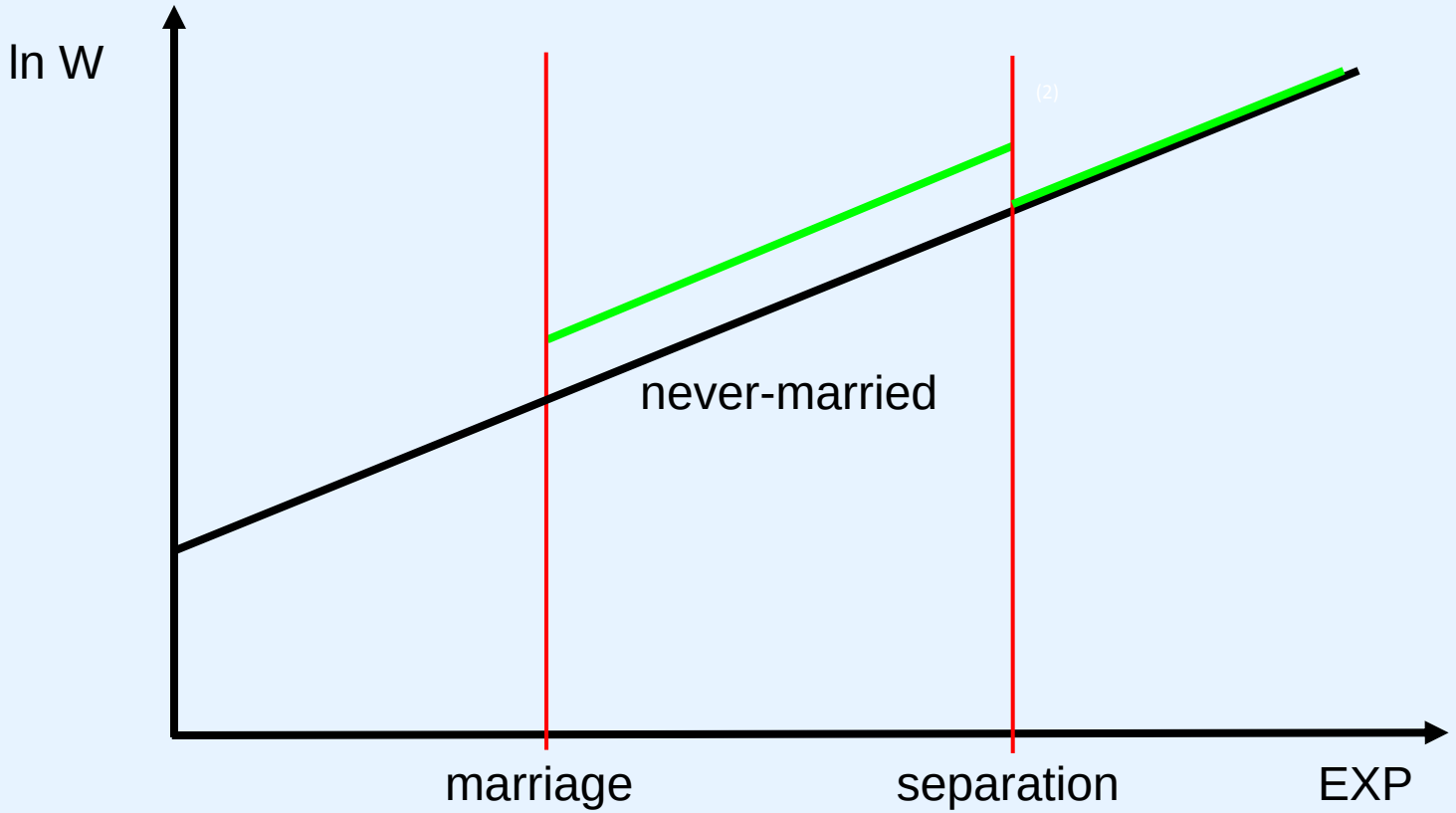
Implications for Time Path of MWP



specialization

work effort, domestication, employer favoritism

Implications for the Effect of Separation



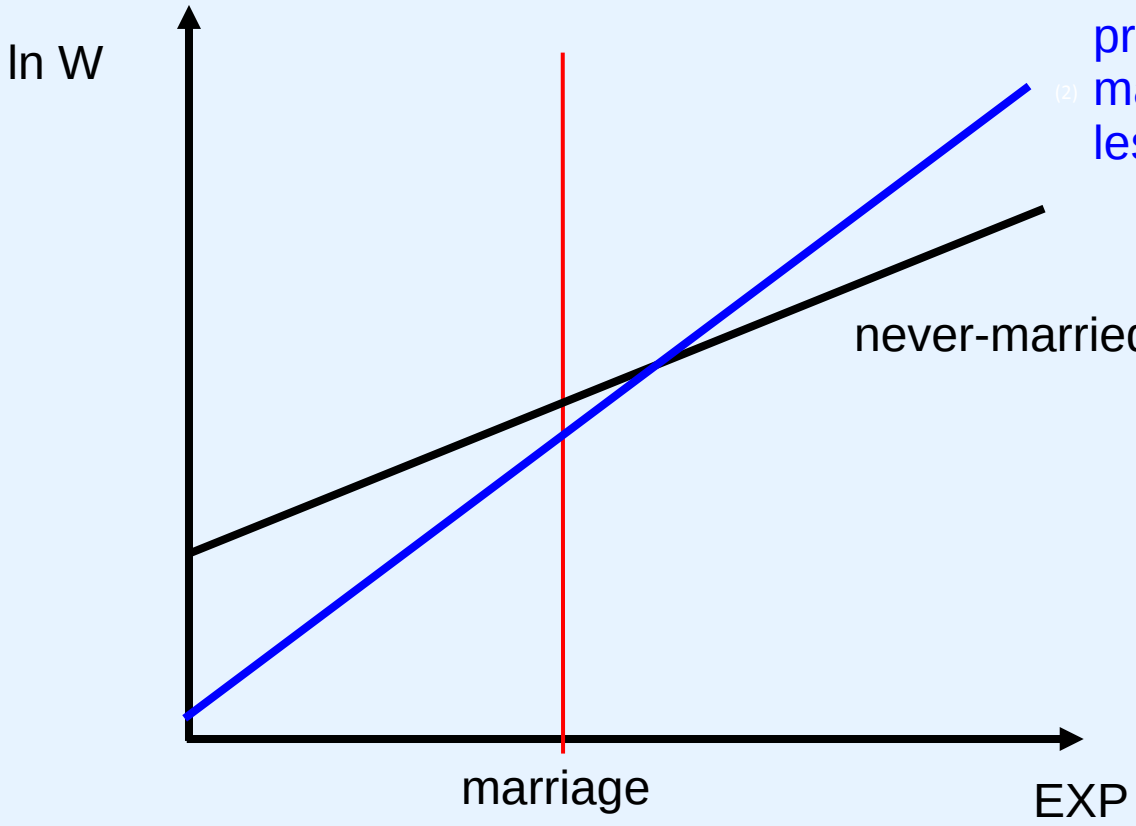
Arguments for a Spurious MWP

UNIVERSITÄT MANNHEIM

- (Self)-selection of high wage males into marriage
  - They gain more from specialization and therefore are more willing to marry
  - They are more attractive marriage partners
    - Due to their higher wage
    - Due to other unobservables correlated with wage

      e.g. physical traits: beauty, health; social skills: communication, problem solving; personality: happiness, self-confidence
- It is not only level, but also „steepness“ of the career
  - Promising young men (steep wage career) are attractive marriage partners
- Standard FE models yield upwardly biased estimates

Selection on Wage Growth



Standard FE model yields upwardly biased estimate for the marriage effect

FE-IS Model

- Solution: Fixed-effects model with individual slopes
- FE-IS extends within-transformation of conventional FE
  - Allows for individual slopes in addition to individual constants
- FE:

$$\ln w_{it} = \alpha_1 exp_{it} + \alpha_2 exp_{it}^2 + \beta_1 m_{it} + \ldots + \alpha_i + \varepsilon_{it}$$

- FE-IS:

$$\ln w_{it} = \alpha_{1i} exp_{it} + \alpha_{2i} exp_{it}^2 + \beta_1 m_{it} + \ldots + \alpha_i + \varepsilon_{it}$$

$$= \quad \mathbf{z}_{it}\boldsymbol{\alpha}_i \quad + \mathbf{x}_{it}\boldsymbol{\beta} \quad + \varepsilon_{it}$$

$$\mathbf{z}_{it}\,(1\times J),\ \boldsymbol{\alpha}_i\,(J\times 1),\quad \mathbf{x}_{it}\,(1\times K),\ \boldsymbol{\beta}\,(K\times 1)$$

FE-IS Estimation

UNIVERSITÄT MANNHEIM

- Extended within-transformation (Polachek/Kim 1994)
  - Idea: Subtract not just mean wage (individual constant), but individual wage career (individual constant and slope)

- Premultiply through by $\boldsymbol{\Omega}_i = \mathbf{I}_T - \mathbf{Z}_i(\mathbf{Z}_i'\mathbf{Z}_i)^{-1}\mathbf{Z}_i'$
  - $\boldsymbol{\Omega}_i\mathbf{y}_i = \ddot{\hat{\mathbf{y}}}_i$, residuals from OLS of $\ln w_{it}$ on $\mathbf{z}_{it}$ for each i
  - $\boldsymbol{\Omega}_i\mathbf{X}_i = \ddot{\hat{\mathbf{X}}}_i$, residuals from OLS of X_i on $\mathbf{z}_{it}$ for each i
  - $\boldsymbol{\Omega}_i\mathbf{Z}_i = 0$, this eliminates unobserved individual constant and slope

Data and Research Strategy

UNIVERSITÄT MANNHEIM

- German Socio-Economic Panel, waves 1984-2006
  - West German residents
  - Cohorts 1935 to 1975, up to age 60
  - no self-employees, private sector workers (samples I-IV) or public sector workers (sample V)

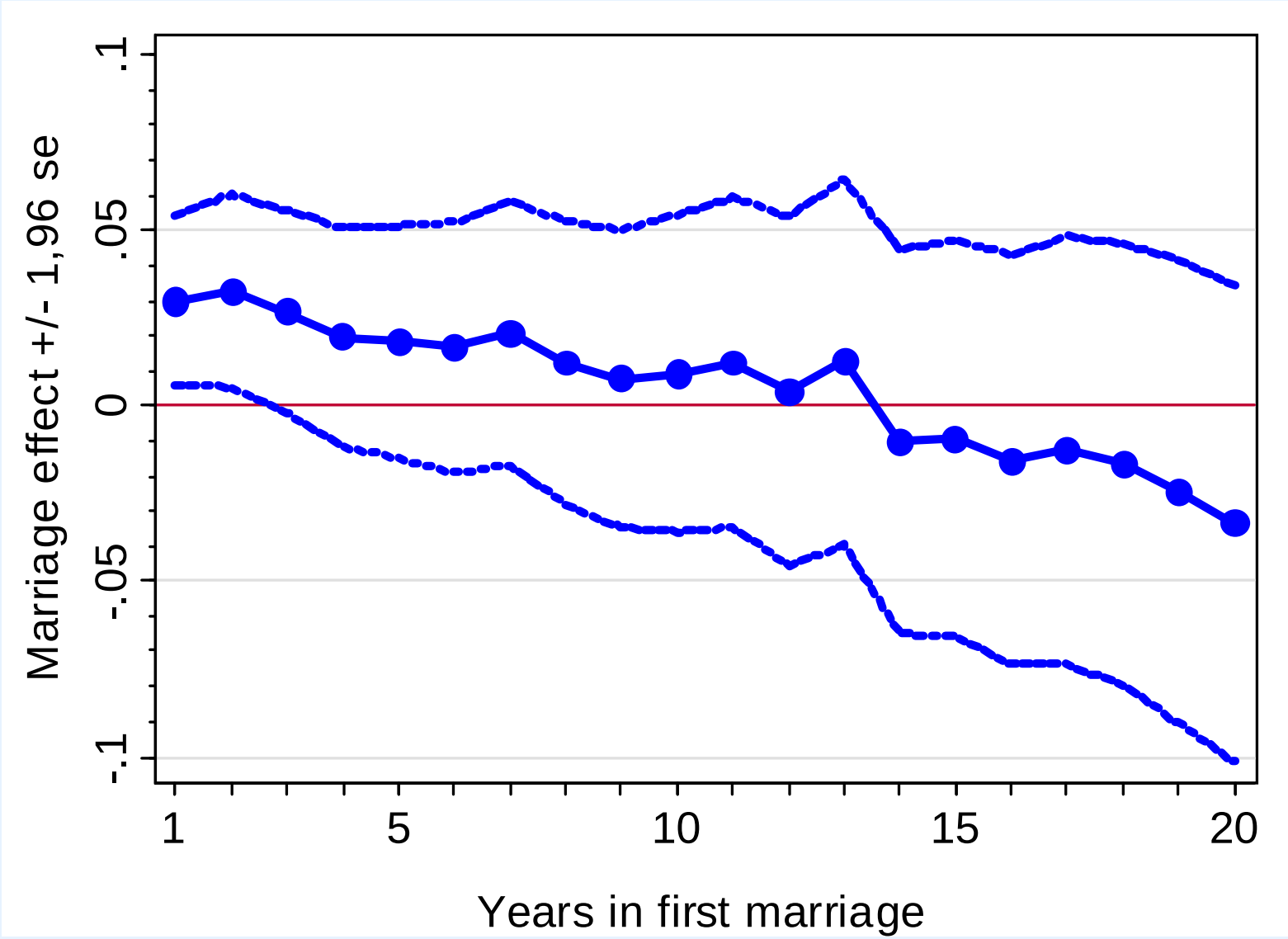
- Samples
  - Sample I (N=1,504): effect of marriage
    - Cohorts 1945-75, never-married when first observed, at least 4 obs.
  - Sample II (N=3,017): time-path of marriage effect
    - Sample I + men in 1st marriage when first observed
  - Sample III (N=4,024): effect of separation/divorce
    - Cohorts 1935-70, in 1st marriage when first observed, at least 2 obs.
  - Sample IV (N=477): effect of remarriage
    - Cohorts 1935-70, separated/divorced or cohabiting after 1st marriage when first observed, at least 2 obs.
  - Sample V (N=758): public sector premium
    - Like sample II, but public sector workers (*Beamte, AN im öffentlichen Dienst*)

Variables

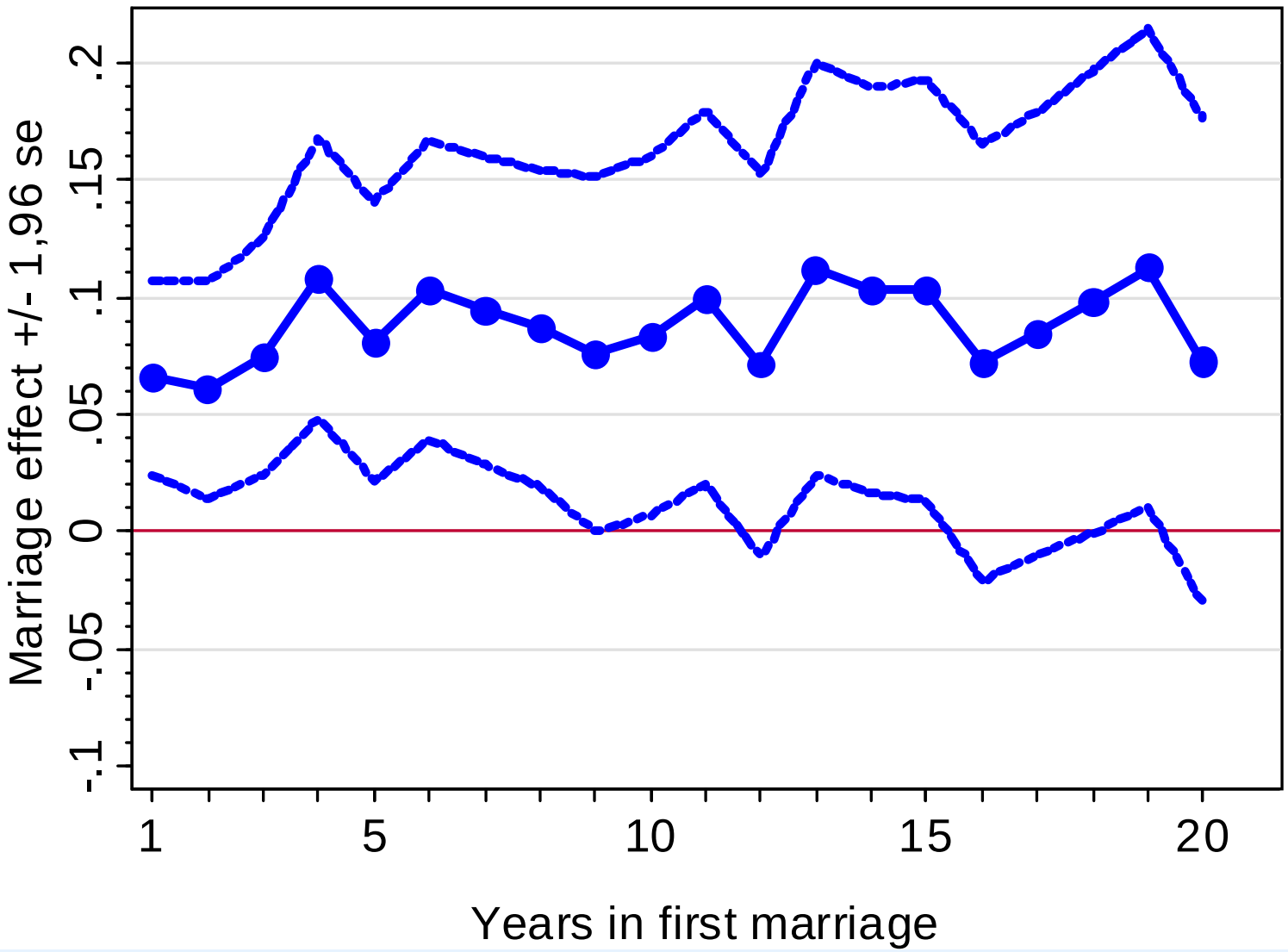
UNIVERSITÄT MANNHEIM

- Hourly wages
  - Log. monthly gross earnings (deflated), divided by actual work hours * 4.36
- Marital status
  - Derived from (monthly) marriage biography, 6 states
    - Never-married single, cohabiting prior to 1st marriage, 1st marriage, separated/divorced, cohabiting after 1st marriage, remarriage
- Marriage duration
  - 20 year dummies
- Labor market experience (linear and squared)
  - Years worked up to t-1, derived from yearly work history file
    - Full-time employment counts as 1 year, part-time employment or vocational training as half a year
- Control variables
  - Number of biological children, education (yrs.), dummy in education, tenure (yrs.), dummies for survey year

Results I: Time Path of the MWP



Results I: MWP in the public sector



Results II: Separation and Remarriage

UNIVERSITÄT MANNHEIM

	Separation sample III		Remarriage sample IV	
	POLS	**FE**	**POLS**	**FE**
Separation	-0.060**	**-0.002**	-	-
	(0.018)	**(0.013)**		
Remarriage	-0.015	-0.009	0.013	**-0.004**
	(0.033)	(0.030)	(0.037)	**(0.030)**
Cohab. after	-0.073	-0.014	-0.005	-0.003
	(0.040)	(0.024)	(0.026)	(0.024)
# children	0.013*	0.024**	0.006	-0.003
	(0.005)	(0.005)	(0.019)	(0.027)
Person-years	31,200	31,200	2,905	2,905

* p<.05, **p<.01, robust S.E. in parentheses

Results III: MWP with POLS, FE, and FE-IS

UNIVERSITÄT MANNHEIM

	POLS	FE	FE-IS
1st marriage	**0.078****	**0.036****	**0.015**
	(0.014)	**(0.013)**	**(0.010)**
Cohab. prior	0.044**	0.009	0.018*
	(0.013)	(0.012)	(0.008)
Separation	0.028	-0.005	0.029
	(0.033)	(0.026)	(0.024)
Cohab. after	-0.029	-0.035	0.063*
	(0.061)	(0.043)	(0.031)
Remarriage	0.040	-0.036	0.013
	(0.043)	(0.044)	(0.038)
# children	0.018*	-0.004	0.008
	(0.008)	(0.007)	(0.007)
Person-years	14,910	14,910	14,910

* p<.05, **p<.01, robust S.E. in parentheses

Conclusion

UNIVERSITÄT MANNHEIM

- Marriage does not make men more productive workers
  - Time path of MWP is declining
  - No effects of separation/divorce and remarriage
  - FE-IS model provides (almost) zero MWP
- More general: Family formation (including cohabitation) and dissolution do not affect wages
  - Literature on benefits of marriage needs to be reconsidered
  - Current trends in family formation do not alter wage structure
- Methodological: take life-courses seriously
  - Do not only match on level obtained (FE)
  - But also on the trajectory (FE-IS)