In youth we learn; in age we understand?

Gender-specific competitiveness over the life cycle

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In a nutshell

1. men of all ages perform better against women in the Czech Republic
2. men do not perform better against women in Austria
3. if ability differences are large, women in both countries are more likely than men to
   - 3.1 lose against strong opponents
   - 3.2 win against weaker opponents

Existing literature

Gender differences in

- negotiations (Dittrich et al., 2014; Leibbrandt and List, 2015; Card et al., 2016)
- competitive behavior (Gneezy et al., 2003; Gneezy and Rustichini, 2004; Niederle and Vesterlund, 2007; Dreber et al., 2011), except Pikos and Straub (forthcoming)

Heterogeneity over the life cycle?

- some aspects of personality develop during adolescence and are stable over the working life (e.g. Fehr et al., 2013; Cobb-Clark and Schurer, 2012)
- little evidence in gender literature (except Czibor et al., 2019)

  women are more risk averse in traditionally male environments but no significant age effects (15 to 80)

contribution:
less male-dominated environment with one-against-one competition & cross-country comparison

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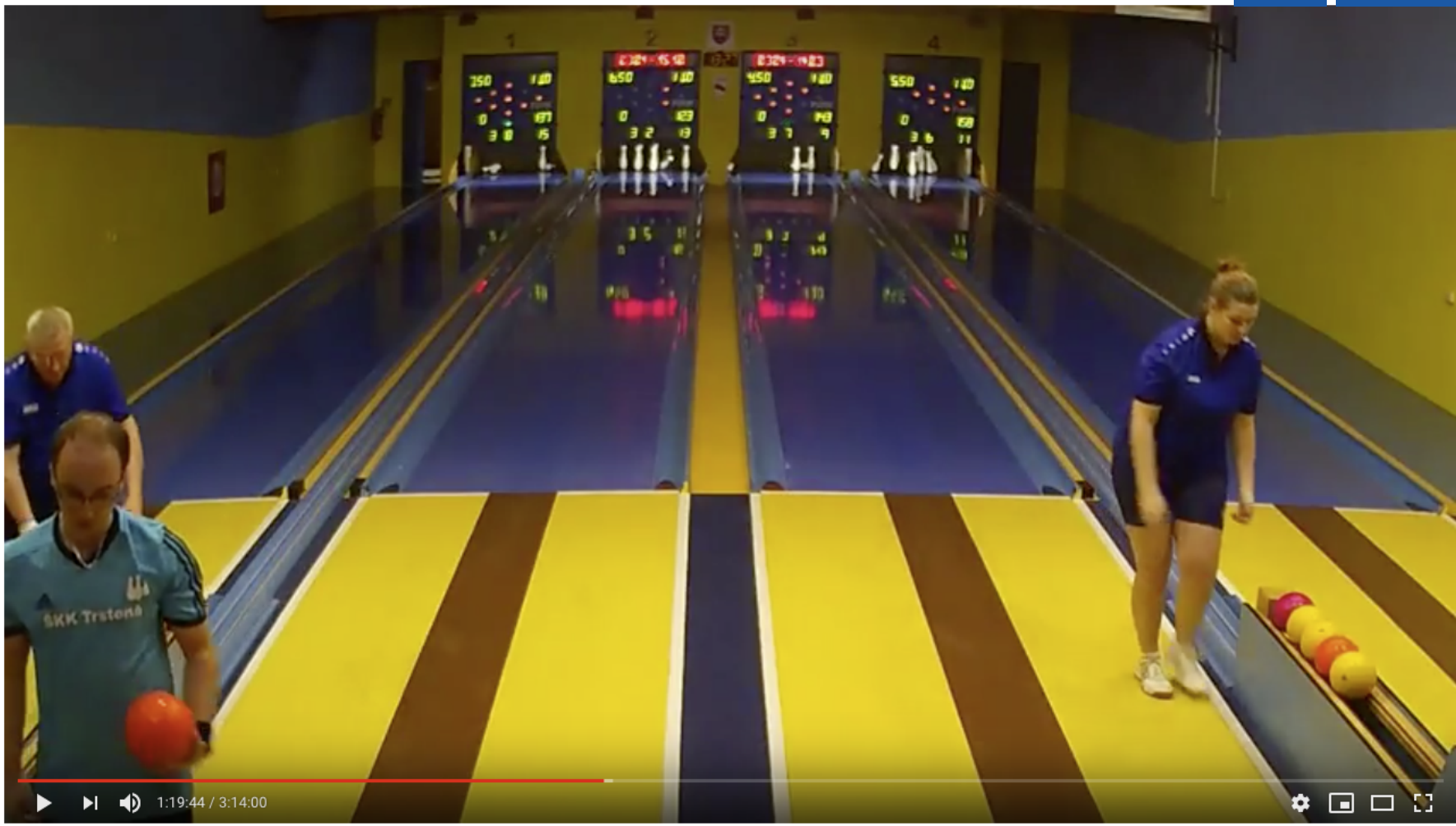
Data



ŠKK Trstená Starek - KK Rimavská Sobota

378 Aufrufe

2 0 TEILEN SPEICHERN

ŠKK Trstená
Live übertragen am 27.01.2018

ABONNIEREN 197

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Ninepin Bowling

Data quality

1. mixed-gender leagues at county level → direct competition
2. non-professional sport → "intrinsic" motivation to win
3. panel dimension (2006/07-2018/19) → ability controls

Game features

- 4-6 players per team
- 30 to 50 bowls per lane: higher score → point
- 1 to 4 lanes, 1 to 4 set points → winner receives team point

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Baseline estimation

$$y_{ijk} = \beta_0 + \beta_1 \cdot female_i + \beta_2 \cdot opp\_gender_{ij} + \beta_3 \cdot female_i \cdot opp\_gender_{ij} + z_k'\gamma + ability_{ij}'\delta + \epsilon_{ijk}$$

- y_{ijk}: performance measures of player i against the opponent j in the environment k
- $female_i$, opp_gender_{ij}, and $female_i \cdot opp\_gender_{ij}$: gender, playing against the opposite gender, and the interaction term
- z_k': vector of "environmental" characteristics k containing dummy variables for pairing, set, and playing at home
- $ability_{ij}'$: vector of player i's, opponent j's and teams' ability measures
- ϵ_{ijk}: is the error term clustered at players' level

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Results

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Own and opponent gender

own gender	opponent's gender: male No.	male %	female No.	female %	Total No.	Total %
male	2,104,786	77.7	98,769	3.6	2,203,555	81.3
female	98,769	3.6	406,880	15.0	505,649	18.7
Total	2,203,555	81.3	505,649	18.7	2,709,204	100.0

5,500 unique players per country (one fifth are women)

winning probability for men 51%, for women 46.7%

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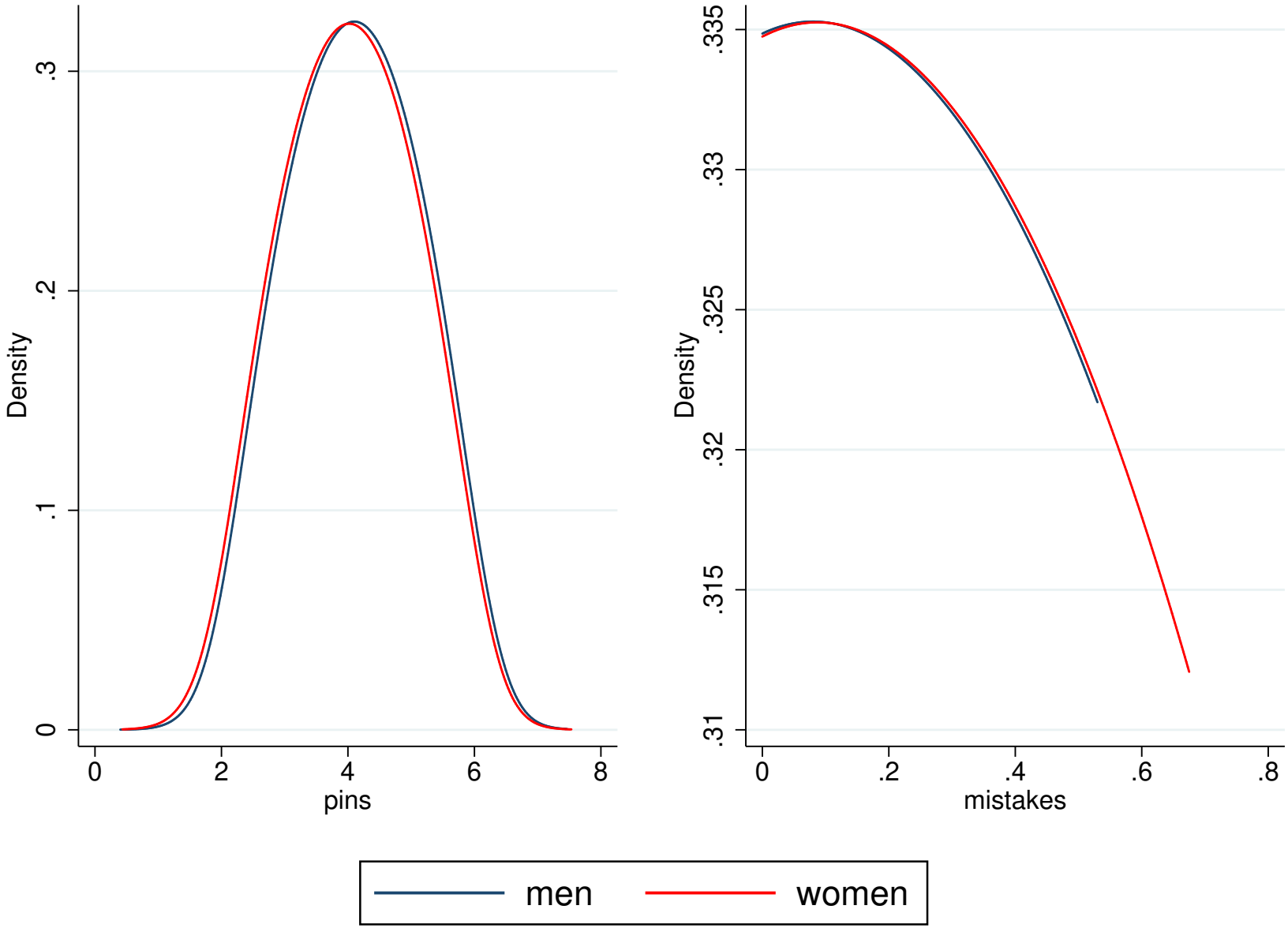
Distribution of outcomes



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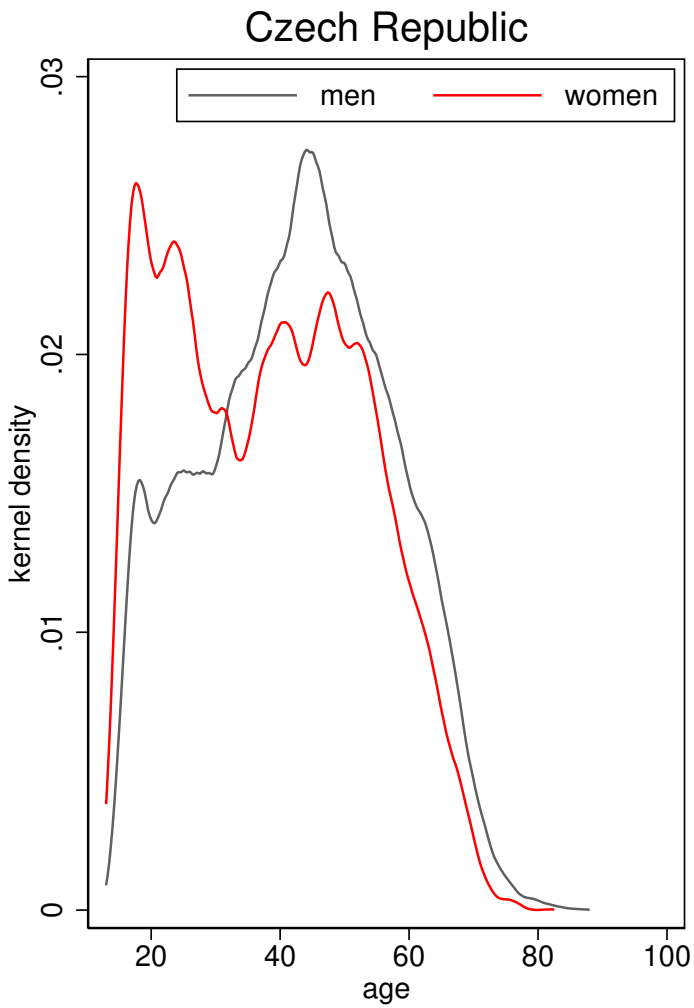
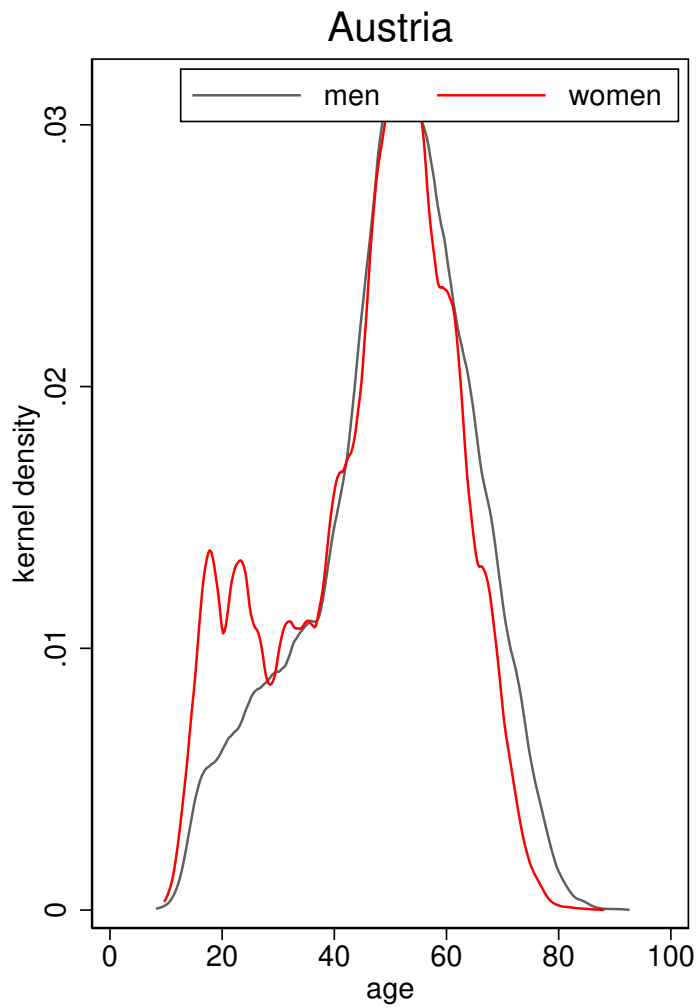
Age distribution of observations





▸ Birthyears

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Fixed effects - mixed games sample

	pins		points		mistakes	
	aut	cz	aut	cz	aut	cz
opp. gender	-0.005**	0.007***	-0.005*	0.016***	0.001***	0.000
	(0.002)	(0.002)	(0.003)	(0.003)	(0.000)	(0.000)
female × opp. gender	0.023***	-0.021***	0.004	-0.028***	-0.003***	0.001
	(0.006)	(0.004)	(0.007)	(0.006)	(0.001)	(0.000)
Observations	257564	249686	257564	249686	64414	249680
Adj. R^2	0.218	0.314	0.105	0.109	0.382	0.433

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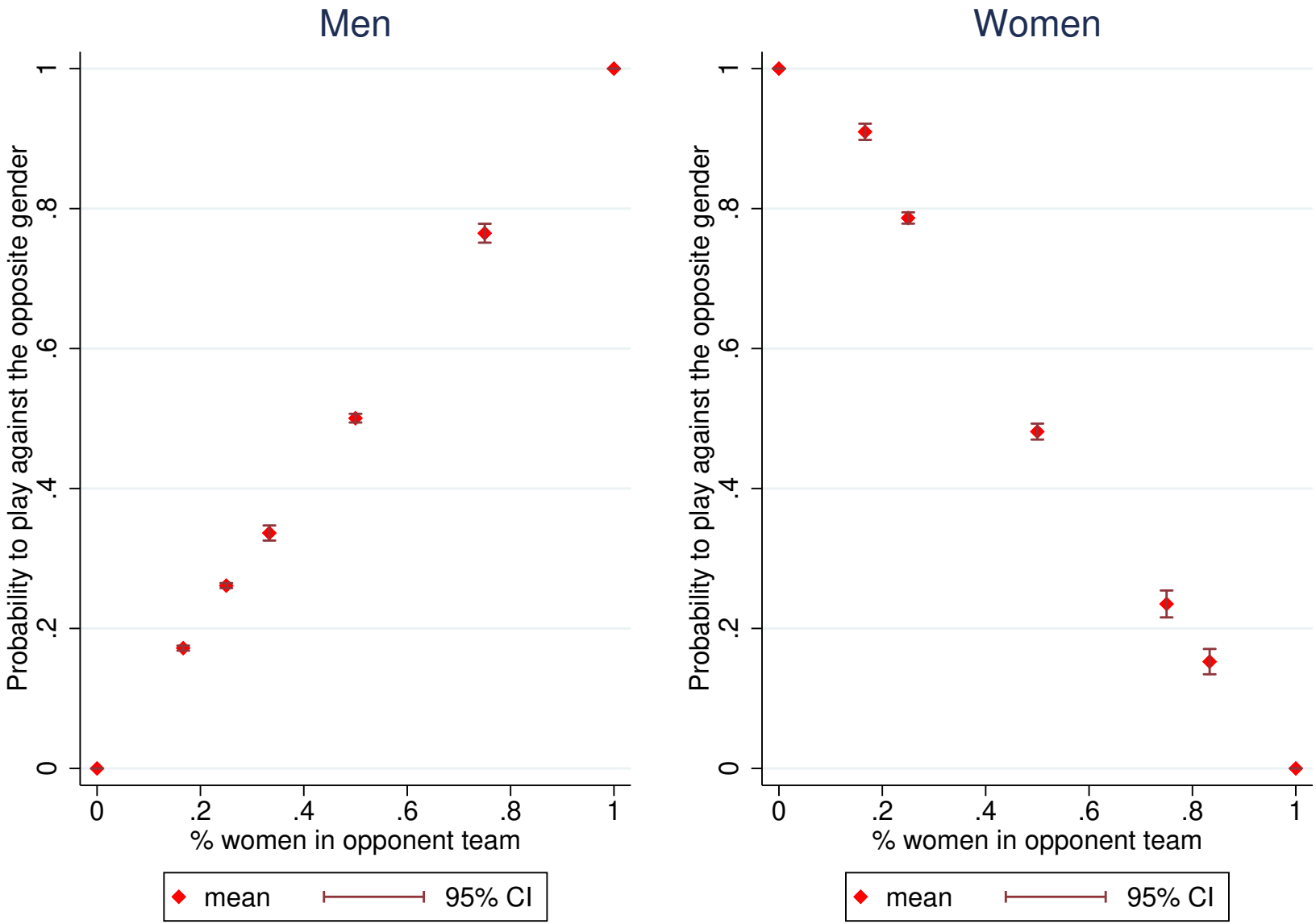
First stage IV



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Second stage IV estimates for the Czech Republic

	pins		points		mistakes	
	women	men	women	men	women	men
opp. gender	-0.042***	0.064***	-0.019**	0.029***	-0.003**	0.002*
	(0.010)	(0.006)	(0.009)	(0.006)	(0.001)	(0.001)
Observations	61518	188168	61518	188168	61518	188162
Adj. R^2	0.344	0.250	0.104	0.091	0.405	0.288

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Second stage IV estimates for Austria

	pins		points		mistakes	
	women	men	women	men	women	men
opp. gender	0.045***	-0.002	0.011	0.005	-0.007***	-0.001
	(0.013)	(0.007)	(0.011)	(0.006)	(0.002)	(0.001)
Observations	54723	202841	54723	202841	13665	50749
Adj. R^2	0.213	0.171	0.100	0.089	0.331	0.291

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Age effects

- separate regressions for age groups - no significant differences ▸ Backup

$\Rightarrow$ Czech men perform better at all ages, Austrian men do not

- full sample: ability difference to opponent
  - Do men and women differ in their probability to win depending on the ability difference?
  - Does this vary over age?
  - Is the pattern different for both countries?

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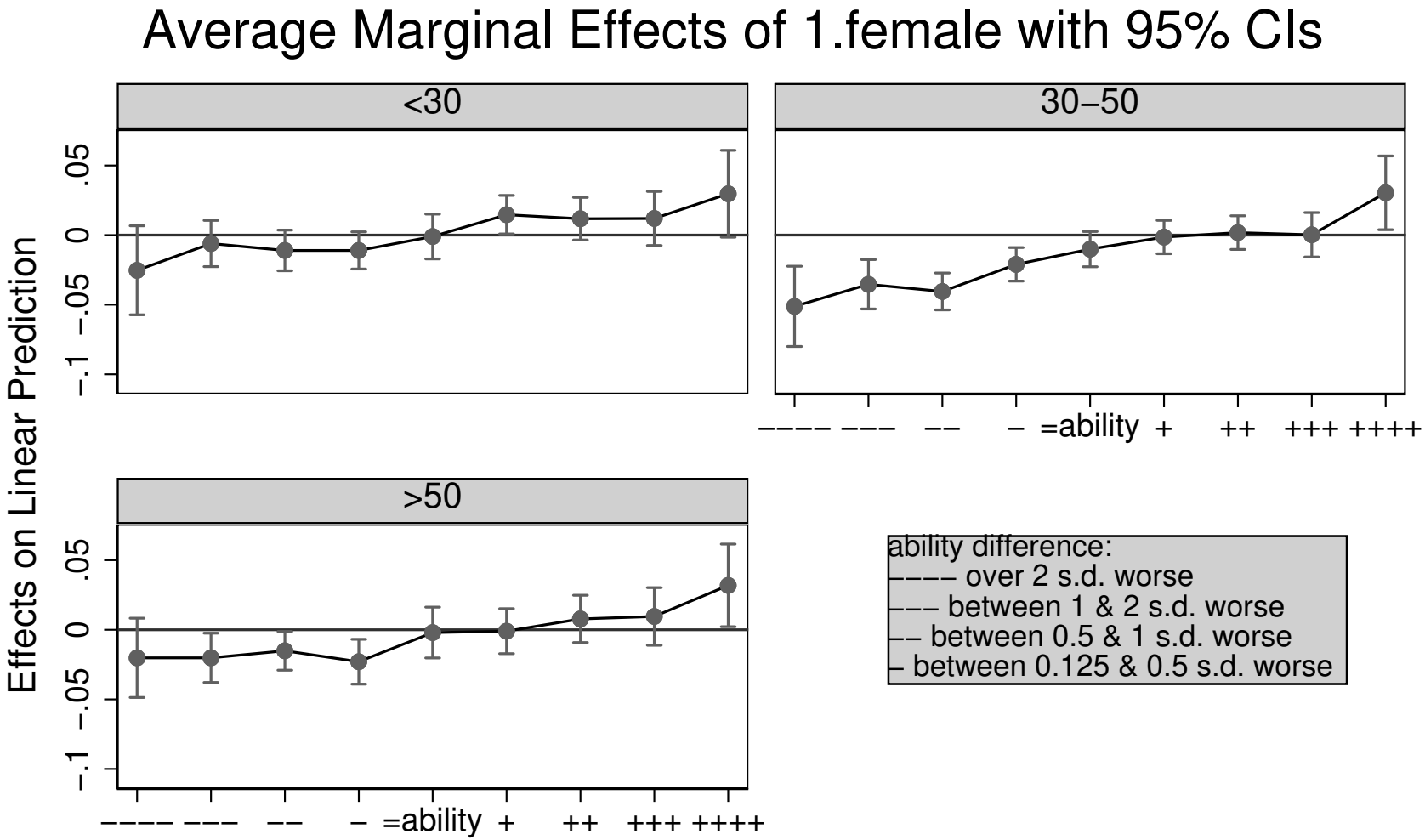
Age effects for the Czech Republic by ability



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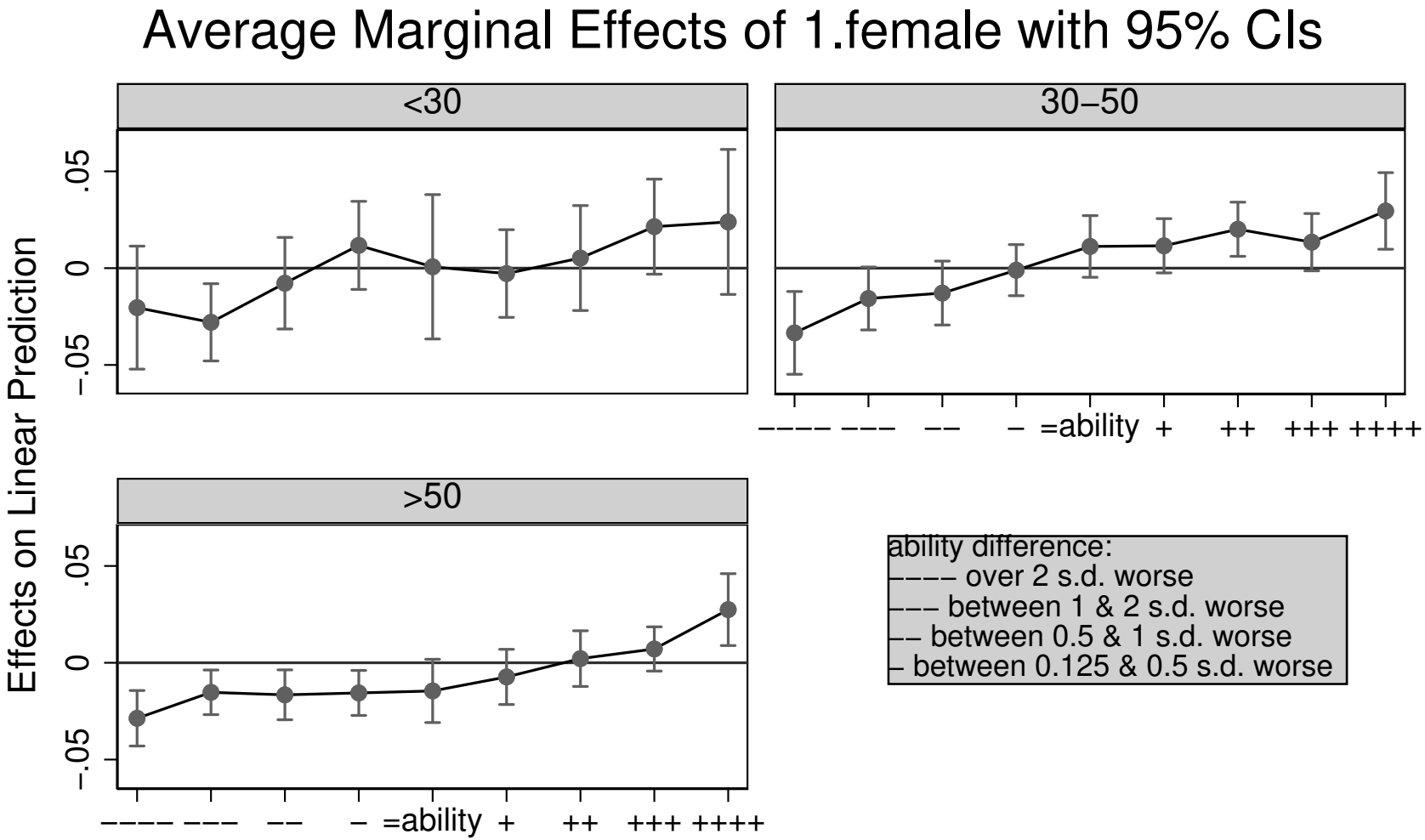
Age effects for the Austria by ability



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Conclusion

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In the Future

- culture as explanation for country differences?
  - female role changes in the Czech Republic (LFP, childcare)
  - performance under pressure (tight situations)
- team effects?
  - team leader's gender
  - referee's gender

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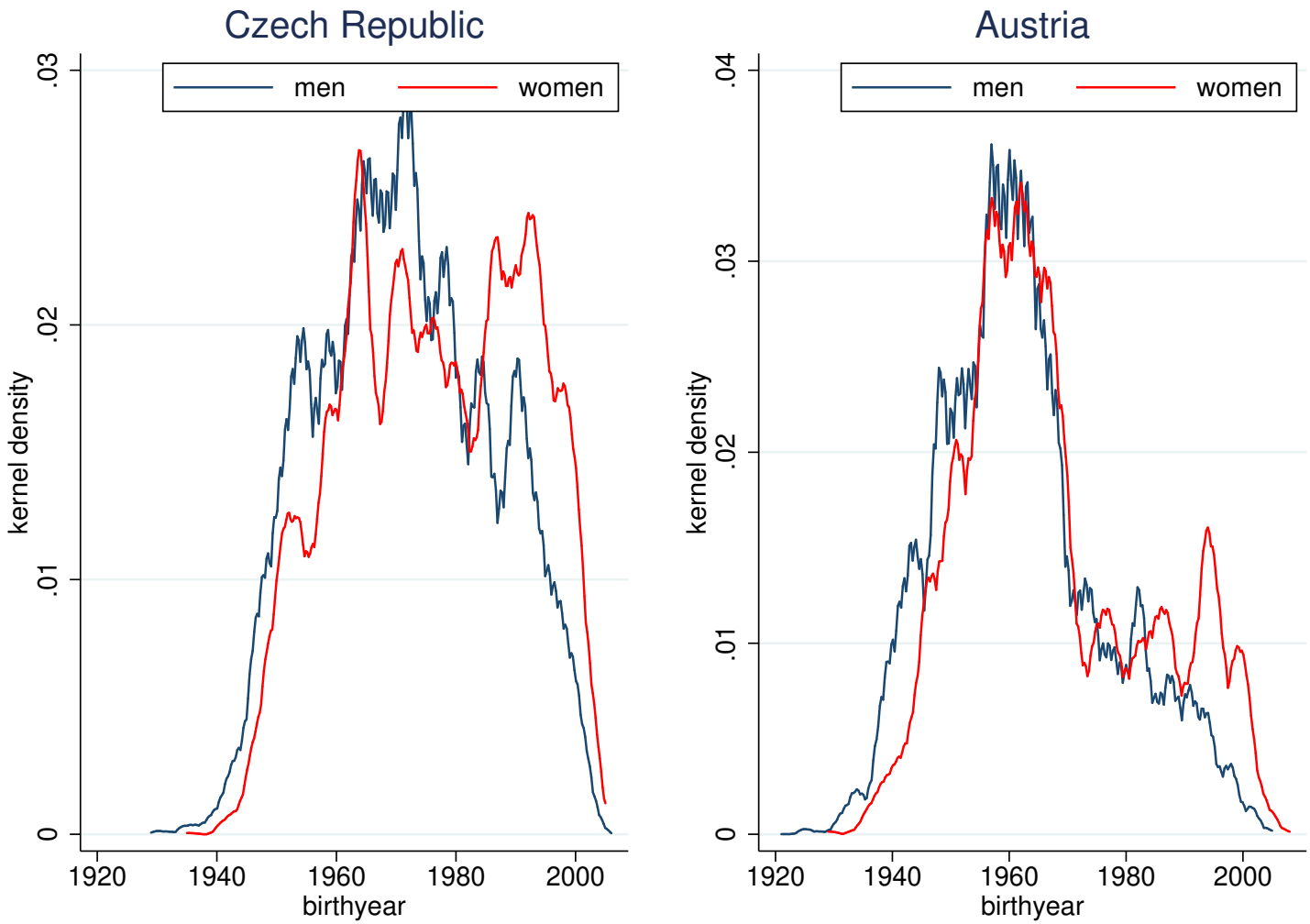
Backup

Age effects for the Czech Republic



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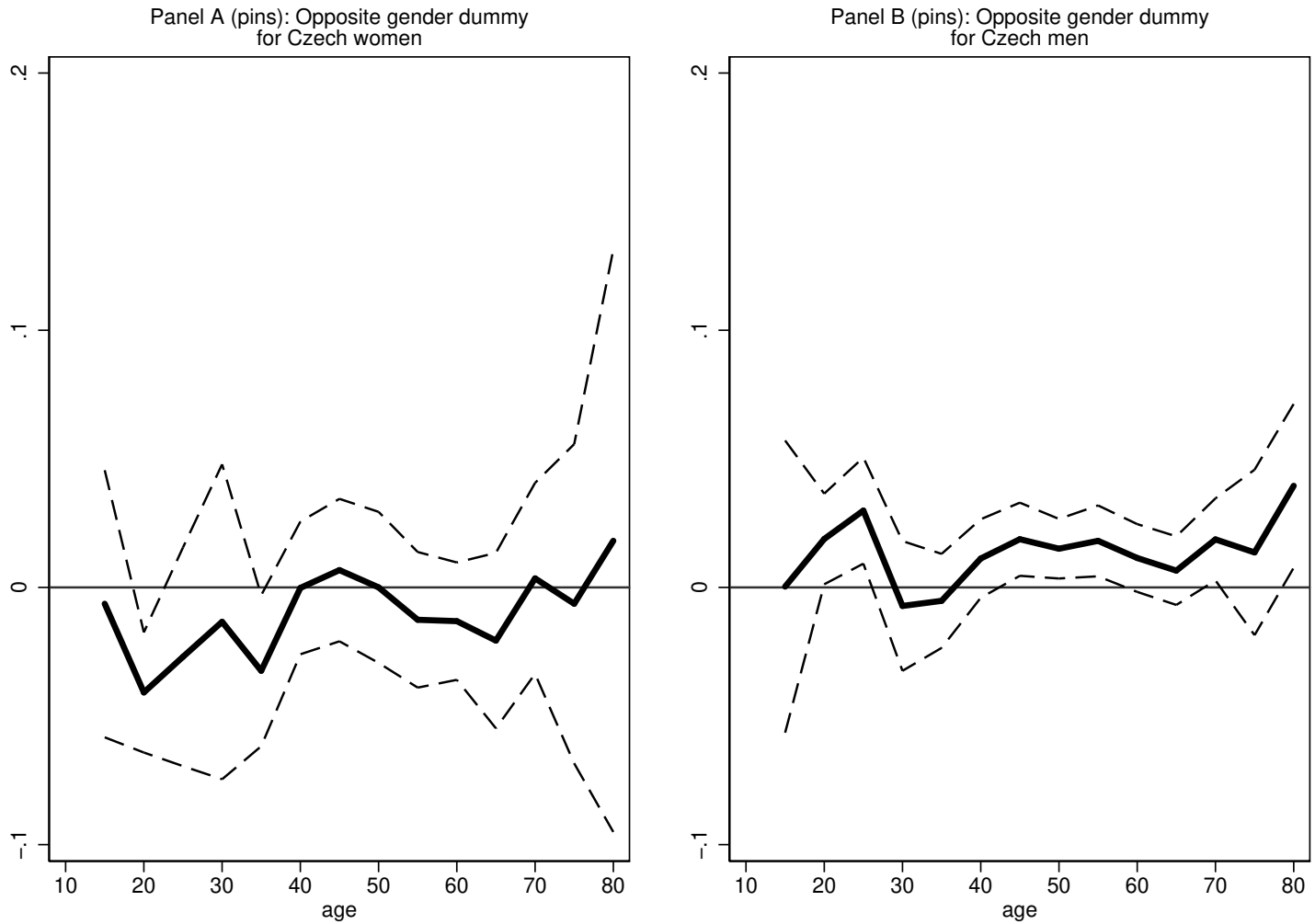
Age effects for the Czech Republic



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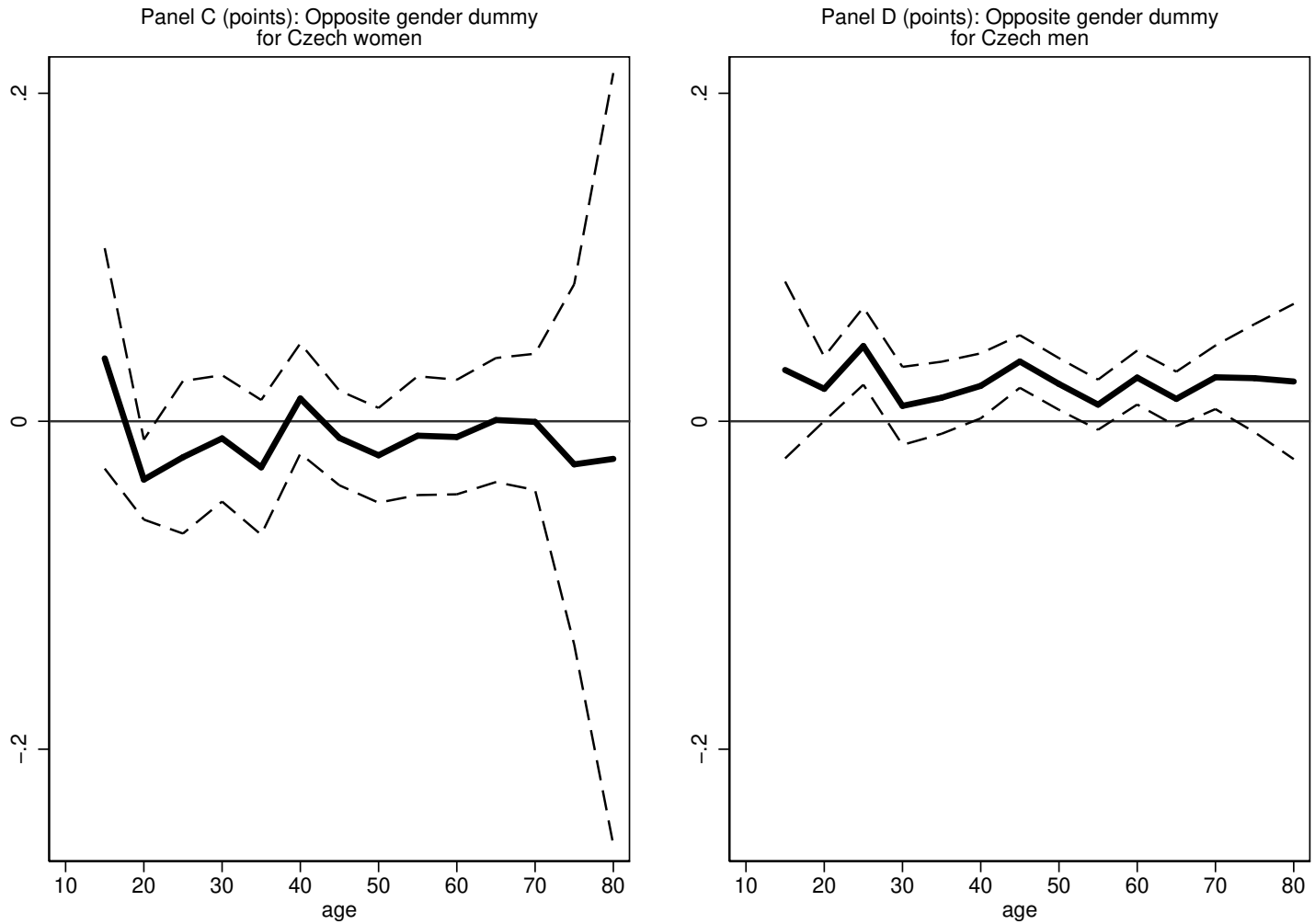
Age effects for the Czech Republic II



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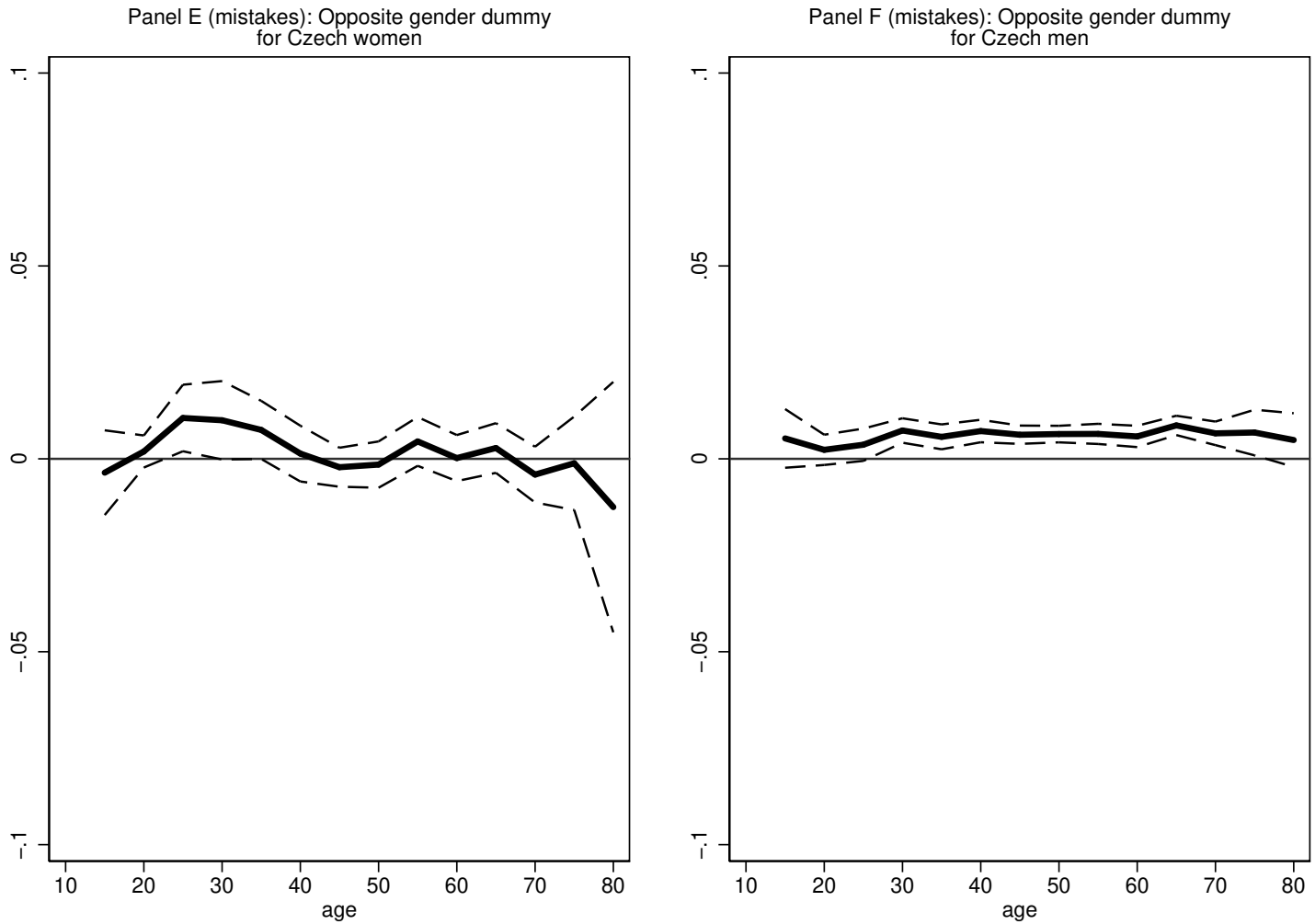
Age effects for the Czech Republic III



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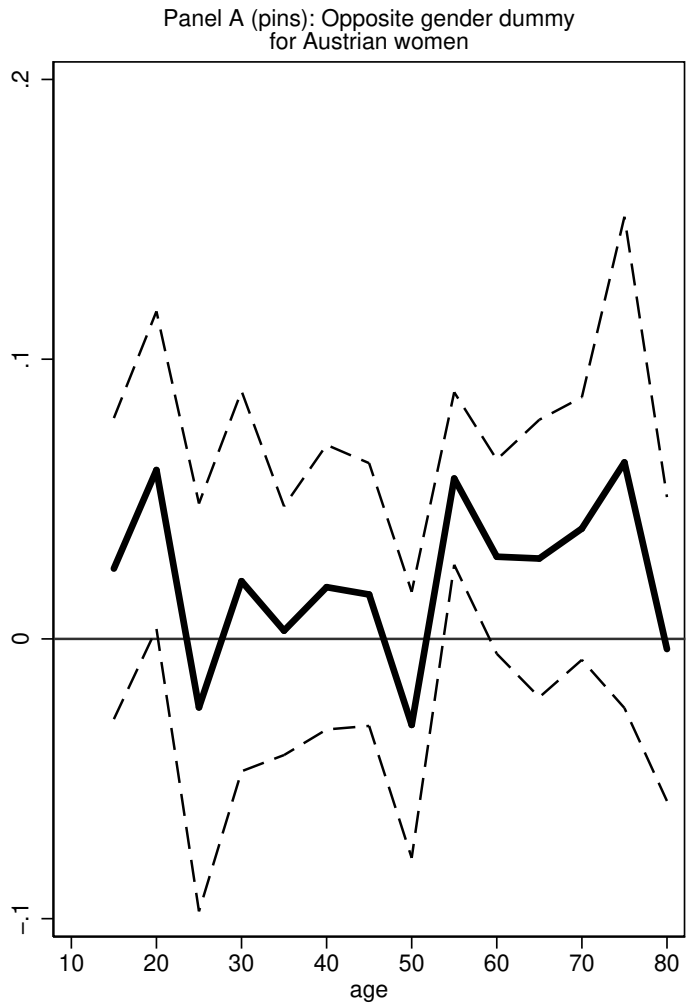
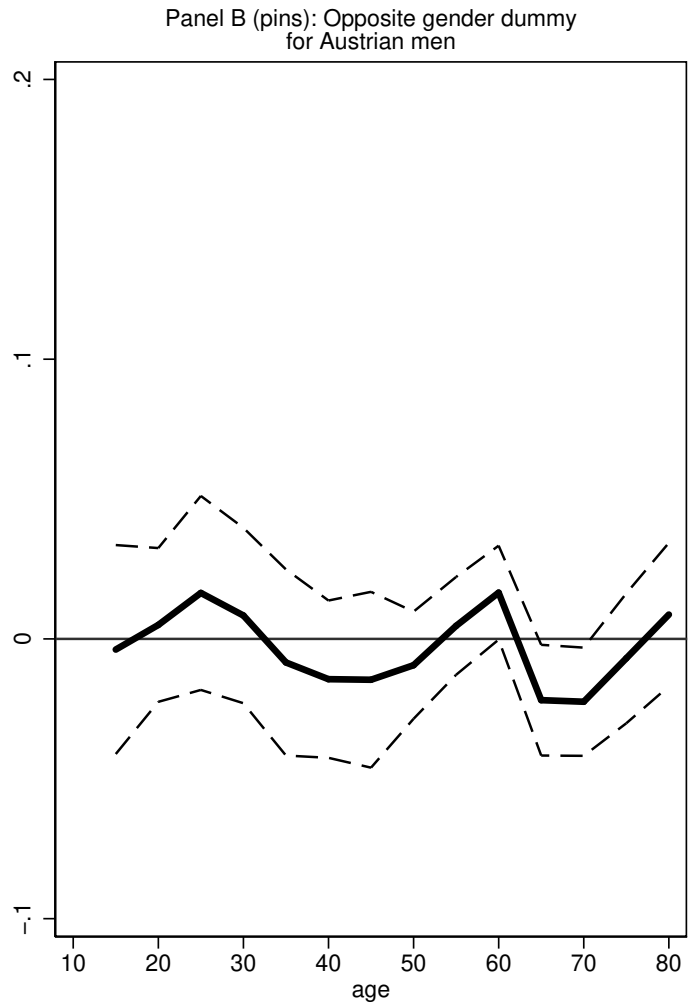
Age effects for Austria





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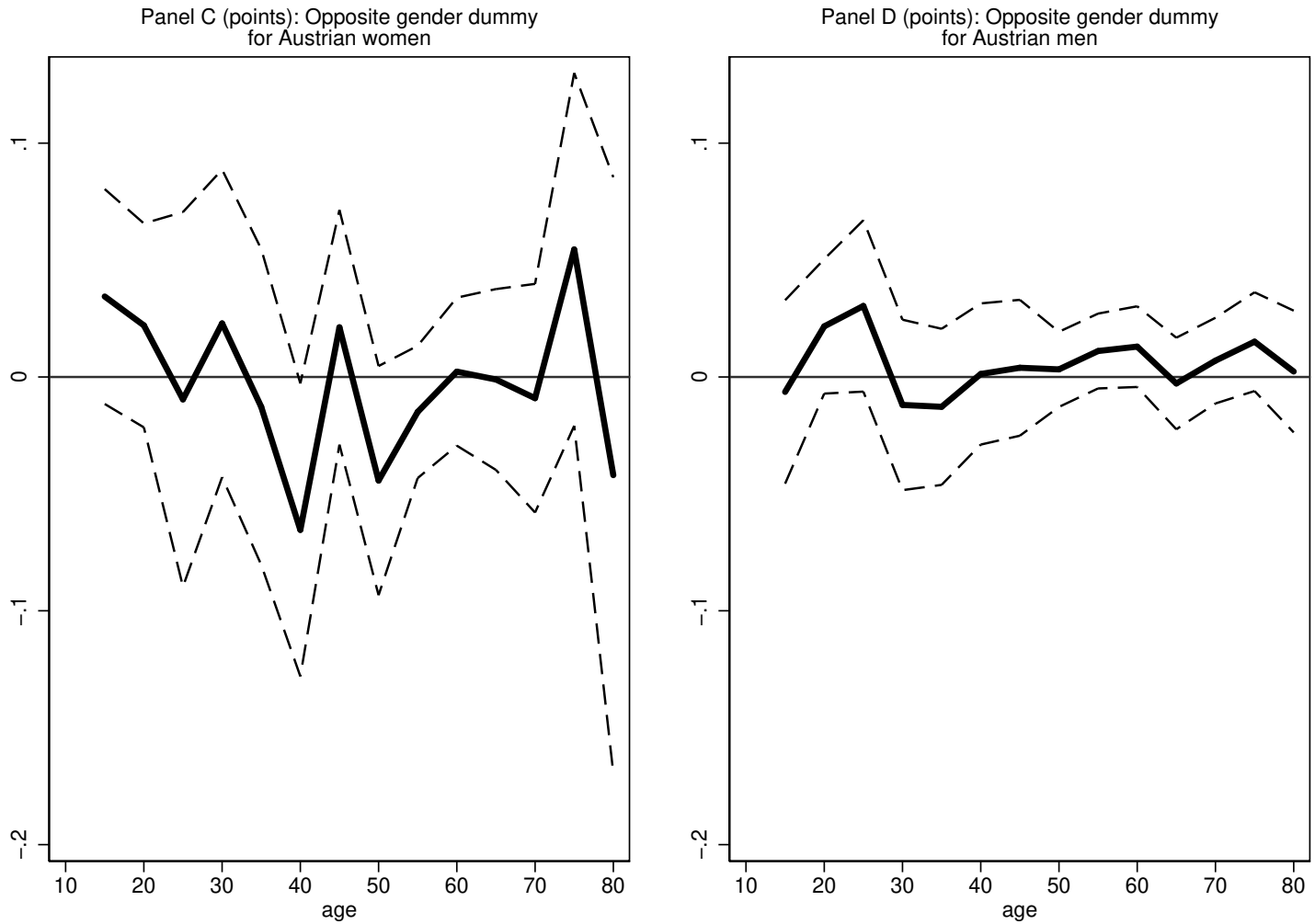
Age effects for Austria II



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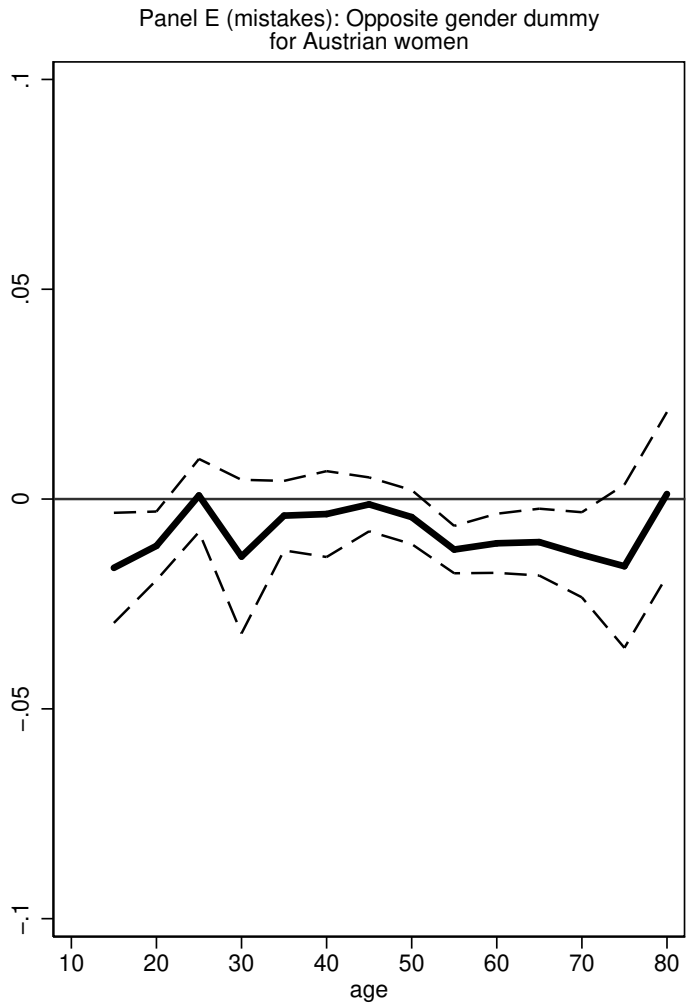
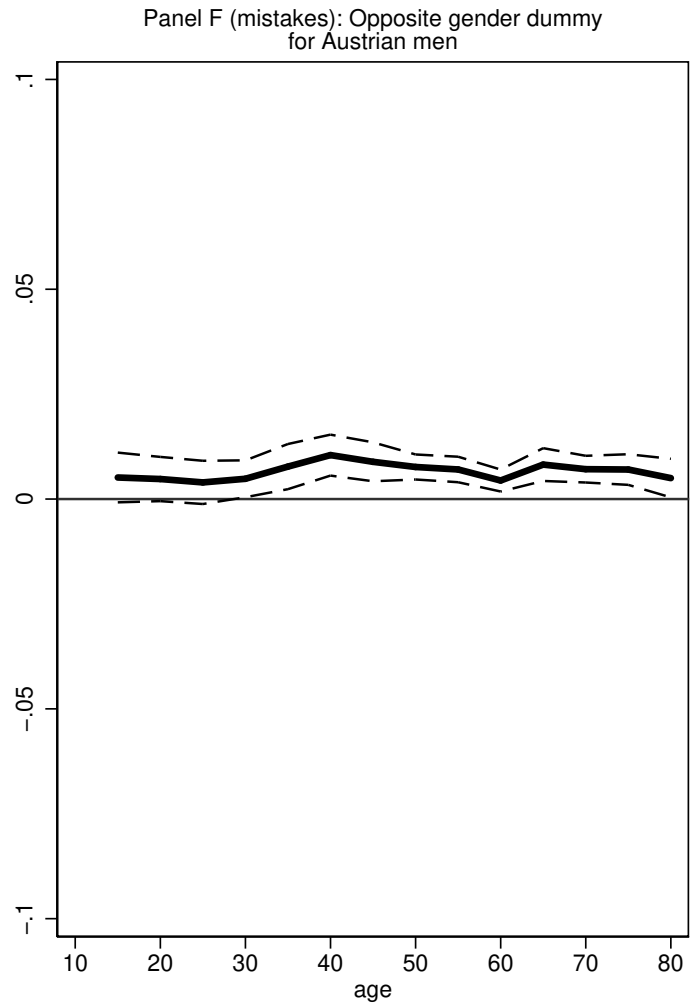
Age effects for Austria III





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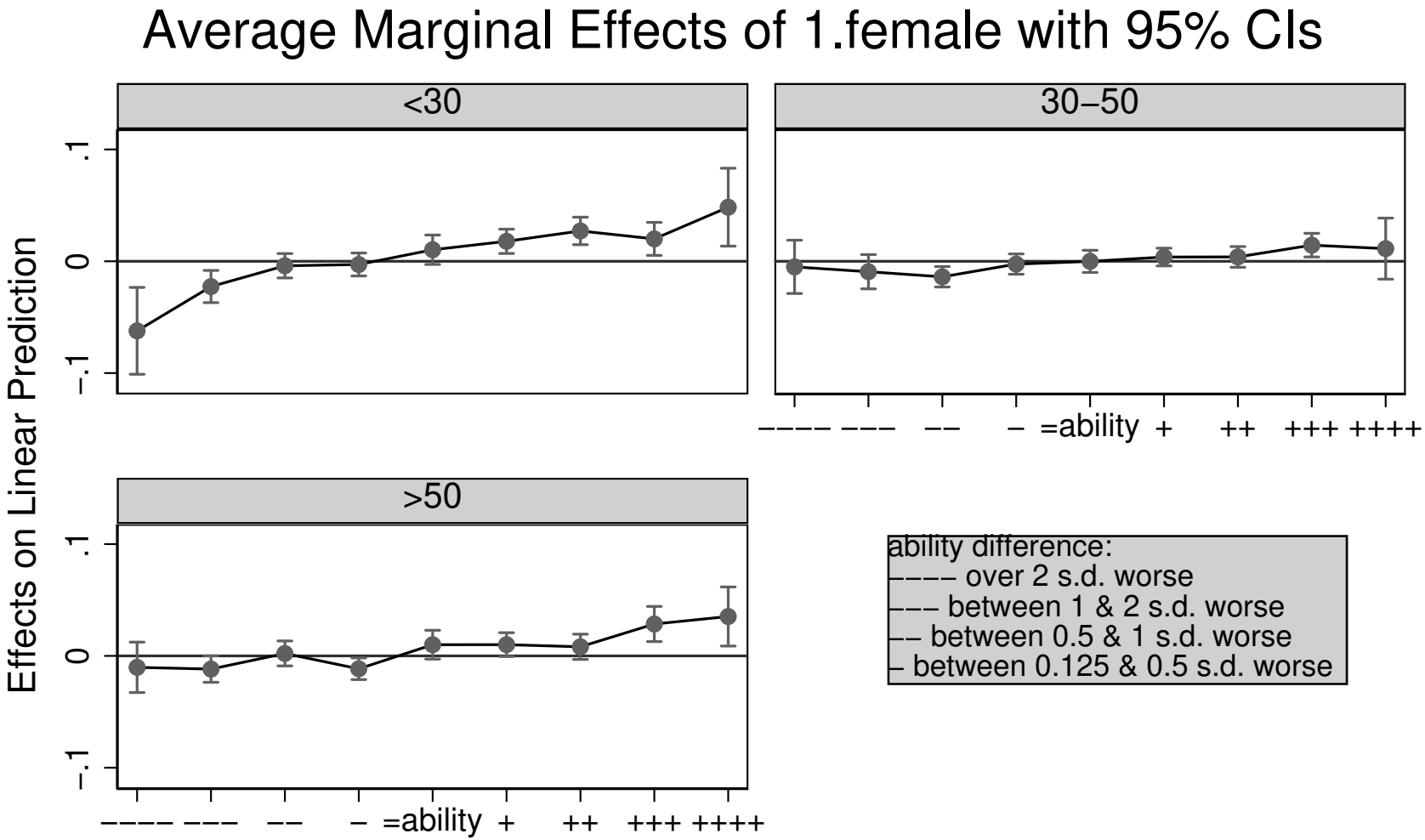
Age effects for the Czech Republic by ability - pins



Age effects for the Austria by ability - pins