Class, status and education:
The influence of parental resources on IEO in Europe 1893-1987

Cinzia Meraviglia
(University of Milan, Italy)
Maarten L. Buis
(Konstanz University, Germany)

Background

- Empirical research on the role of education as fostering social mobility or inequality has led to inconsistent evidence (Breen, 2004; Breen, Luijkx, Müller, & Pollak, 2009, 2010; Shavit & Blossfeld, 1993)
- Some methodological factors might be responsible of (at least part of) the observed inconsistencies
  - The time span considered, the countries included in the analysis, the measurement strategy, the type of data, the inclusion/exclusion of women, the technique of analysis, …
- In this paper we focus on one of these factors, namely the measurement strategy concerning social origin (see Bukodi and Goldthorpe 2013; Buis 2013) while adopting a inclusive approach as for some others (gender, country, time)

Social origin under focus

- We address two methodological issues, both potentially influencing the results of our analyses on IEO over time:

1. Which parent provides the information on the social position of the family of origin?

2. When operationalising social origin, which kind of resource is preferable to use: the cultural dimension (parents' education), the symbolic dimension (parents' social status), or the economic one (parents' social class)?

Issue #1: The male bias

- Kalmijn (1994) claims that stratification research is affected by a male bias
- This follows from the usual practice to operationalize social origin as:
  - Father's occupation as the only indicator (even when the mother had a paid job) [conventional approach]
  - The best/highest (?) social position among father's and mother's [dominance approach, Erikson 1984]

Issue #1: The male bias

- Dominance does not help!
  - In many countries not many mothers have a better social position than fathers' (in ESS data rounds 1-5, only 25% on average)
  - Albright (1998, 36-37): dominance is "an updated version of the conventional approach"

- Beller (2009): it's time to bridge the gap between theory (class origin as a family-level variable) and practice (class origin indexed solely by father's social position) and to correct the resulting bias

Issue #1: Implications

- Excluding mothers from the picture amounts to:
  - saying that mother's employment status or education does not affect their children's life chances (Sorensen 1994)
  - doing as if the sole type of family in any given society is the male breadwinner type, hence making a faulty generalization (what holds for male breadwinner origins generalized to dual-earner origins)
- "The patriarchal family model with husband working full time at an occupation, which underlies much of stratification theory, is not an adequate model for contemporary society"

Issue #1: Past evidence

- Kalmijn (1994): maternal occupational status is as important as father's for offspring's educational outcomes, and it is so equally for daughters and sons
- Korupp, Ganzeboom and van der Lippe (2002): the non-dominant parent still exerts some influence on the status attainment process
- Meraviglia and Ganzeboom (2008): ignoring mother's influence leads to overestimation of both social fluidity and the speed with which inequality decreases over time in Italy
- Beller (2009): Considering only father's class overestimates social fluidity, especially in recent years, when an upturn in the influence of social origin on educational outcomes took place
- Tomescu-Dubrow & Domański (2010): father's position *per se* is not an adequate proxy of the class origin position in 21 European countries
- Buis (2013): as long as the mother also has a paid job, both parents matter; no support for the conventional view (explicitly tested) was found

Issue #1: Solution

- Sørensen (1994, 29) suggests to maintain "the assumption of the family as the unit, [while] changing the measurement of the status of the family"
- This means including mothers into the picture (however not using the dominance approach!)

Issue #2: The simplification bias

- Another discrepancy between theory and practice (ie., another simplification):
  - In theory, social background is a multidimensional concept
  - In practice, it is usually indexed by a single variable, either parental class, or education, or (social / socio-economic) status
- Is a single measure enough to account in a satisfactory manner for the influence of social origin on education?

Issue #2: Past evidence

- Shavit & Westerbeek (1998): father's occupation and education, which give different conclusion as for IEO over time
- Duncan, Featherman, & Duncan (1972): composite indicators, explaining a larger portion of the variance of the outcome variable (difficult to use in a comparative study)
- Hauser & Huang (1997), Bollen, Glanville & Stecklov (2001): parental income, education and occupation measure different aspects of social background; each should be considered as separate from the other
- Mare (1981), Kalmijn (1994), Conley (2001), Korupp, Ganzeboom & van der Lippe (2002), Lareau (2003): different indicators of social background cumulate their effect
- Bukodi & Goldthorpe (2013): (dominance) status, education and class have an independent effect from each other on educational attainment
- Buis (2013): father's and mother's education and SES (as a latent variable) in the Netherlands matter

Issue #2: Solution

- Multi-indicator approach:
  - Class, as an indicator of the economic dimension (given its association with income security, income stability and income prospects; see Goldthorpe & McKnight 2006)
  - Social status, as an indicator of the symbolic dimension (which, in a Weberian sense, drives considerations and behavior about whom to meet socially, whom to marry, the appropriate life style, the proper neighborhood where to reside, the symbols used to convey the status level, etc.)
  - Education, as an indicator of the cultural dimension (like in the Bourdieusian tradition of cultural capital)

Our contribution

1. We consider the family to be the proper unit of analysis, hence bringing mothers in and test their influence
2. We consider social origin ad a multidimensional concept, formed by (at least) three components (cultural, economic and symbolic)
3. We broaden the boundaries of previous studies by analyzing 29 countries, and most of the 20th century (very ambitious…)

Hypotheses

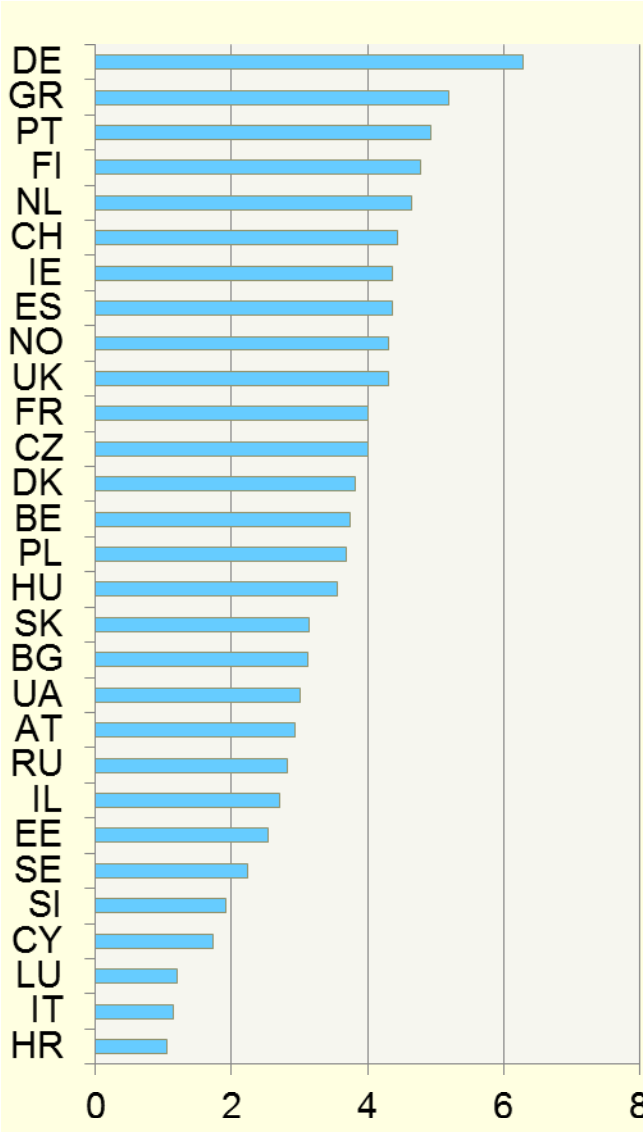
1. The mix of family resources influencing education is expected to change over time and across countries (Jonsson, Mills & Muller 1996; Lindbekk 1998 Jonsson & Erikson 2000; Jaeger 2007; Breen et al. 2009)
2. Each component (parental education, status and class) has a distinctive role in shaping the IEO trend over time (Kalmijn 1994; Beller 2009; Bukodi and Goldthorpe 2013),
   - 2.1 Parental education is more relevant than parental class or status (Gesthuizen, de Graaf, and Kraaykamp 2005; Buis 2013; Bukodi and Goldthorpe 2013)

Hypotheses

3. Mothers have a specific role in the process of educational attainment
   3.1 Mother's education is more influential in male breadwinner families of origin than in dual-earner ones
4. IEO decreased over time in all countries, though at a different pace (Breen et al., 2009)

Data

- ESS rounds 1-5 (in round 6 an Isco-08 code for parental occupations is available only for CH, CZ, DE, IS, NL, PT and SI)
- 29 countries: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IL, IT, LU, NL, NO, PL, PT, RU, SE, SI, SK, UA
- Some countries provide more data than others; not all countries cover all rounds
- Case selected by age (25>) and valid information on R's education and parental education and occupation
- N = 153 261 (*dweight*)



Variables

- Time:
  - birth years 1893-1987
  - centred 1950
  - linear splines (knots at 1940 and 1960)
- Education:
  - ISLED (Schroeder & Ganzeboom 2013)
  - Educyr criticized as a valid measure of educational attainment, especially in comparative research (Hout and DiPrete 2006; Schneider 2009; Muller 2008)
  - ISLED performs “the scaling of education that best accounts for the conversion of social resources into social outcomes” and improves both the ISCED and the educyr by a 10-11% margin

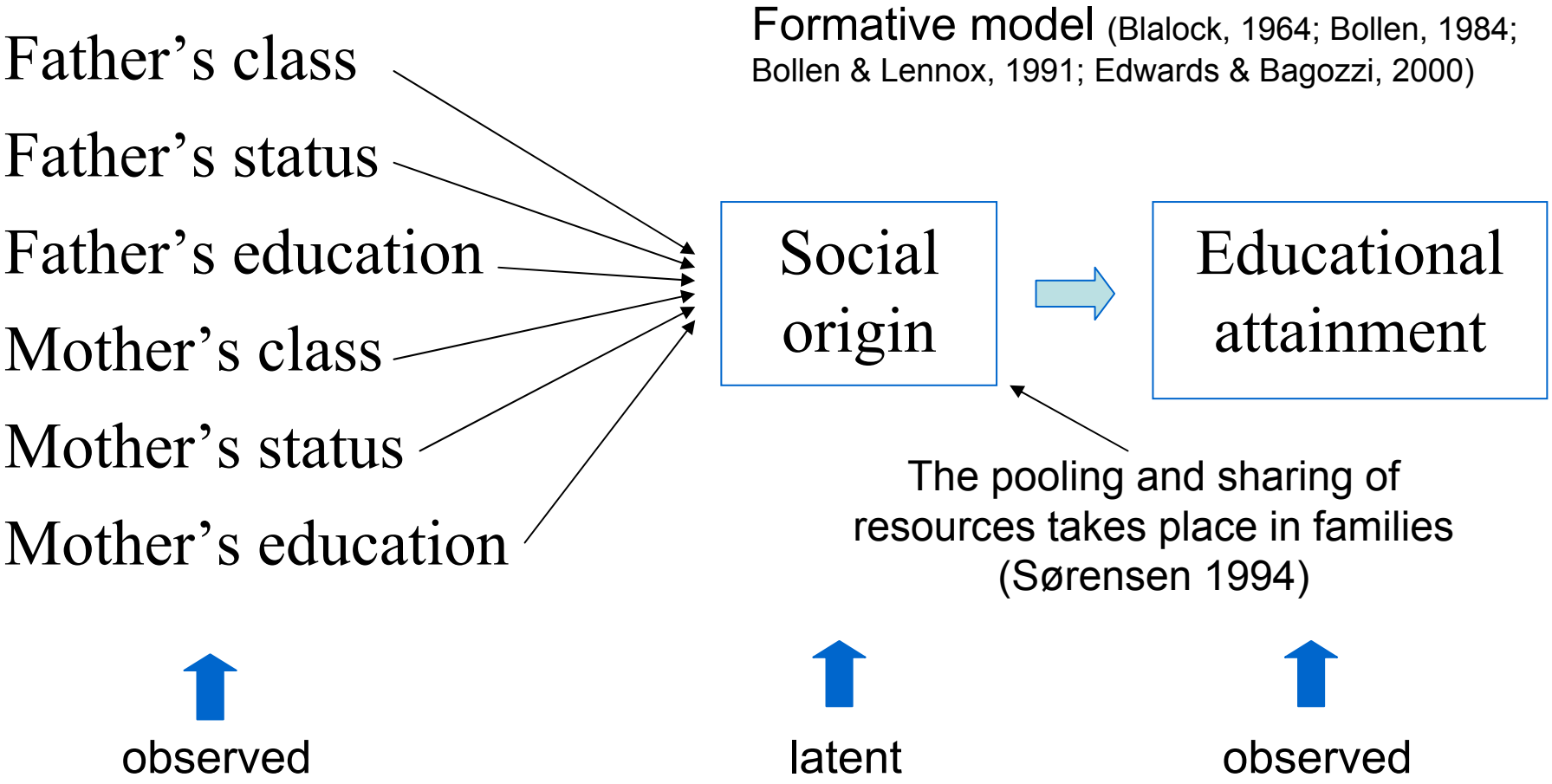
Variables

- Occupation:
  - ISCO-88 codes provided by Ganzeboom and Nikoloski (2012) (http://www.harryganzeboom.nl/ESS-DEVO/index.htm)
  - Class: six EGP classes (I, II, III, IV, V+VI, VII), with an extra category for homemaker moms
  - Social status: ICAMS (International CAMSIS Scale) (de Luca, Meraviglia & Ganzeboom 2012; Meraviglia & de Luca 2013)
    - The more popular ISEI is not a true social status measure, since it embodies reference to both education and occupation, which we consider as separate resources provided by the family of origin

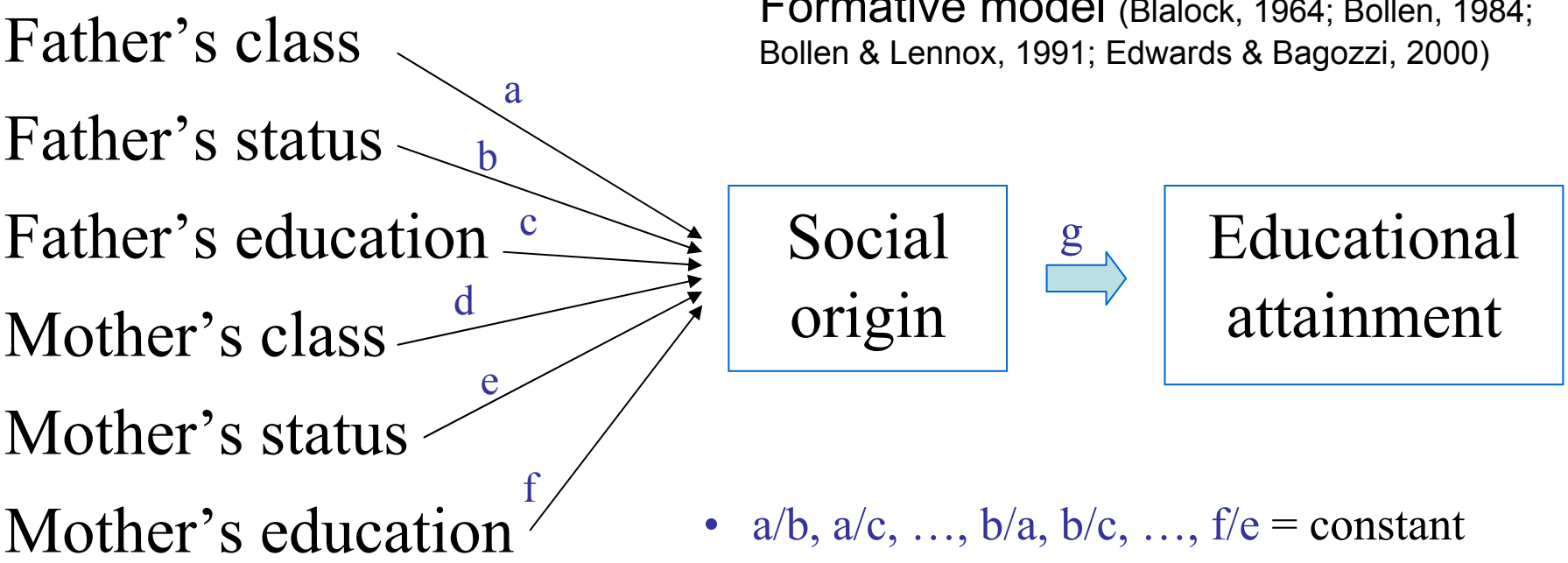
ICAMS scores by EGP

	Mother		Father	
EGP	*mean*	*s.dev.*	*mean*	*s.dev.*
I	72,1	0,10	71,7	0,06
II	62,8	0,06	60,7	0,05
IIIab	50,7	0,06	50,7	0,08
IVabc	39,6	0,10	42,5	0,07
V+VI	35,3	0,05	34,8	0,03
VIIab	29,4	0,04	32,3	0,03

The conceptual model



The conceptual model



Formative model (Blalock, 1964; Bollen, 1984; Bollen & Lennox, 1991; Edwards & Bagozzi, 2000)

- a/b, a/c, …, b/a, b/c, …, f/e = constant over time
- g = varying over time, gender, country, and their 2- and 3-way interactions

The formal model

- Parametrically weighted linear regression (Yamaguchi 2002; Buis 2013)
- Null hypothesis:
  - The combined effect of the three components of social origin (status, education and class) for both parents are allowed to vary over the constraining variables
  - However their relative importance remains constant
- Alternative hypothesis:
  - No proportionality constraint is needed to model the (linear) effects of the independent variables
- Stata module **`propcnsreg`** (Buis 2010)

$$eduyrs_i = \beta_0 + \underbrace{(\lambda_0 + \sum_k \lambda_k z_{ik})}_{\text{constraining variables}} \underbrace{(\gamma_0 + \sum_j \gamma_j x_{ij})}_{\text{constrained formative indicators for origin}} + \underbrace{\sum_m \beta_m u_{im}}_{\text{unconstrained covariates}} + \varepsilon$$

where γ_j / γ_{j+n} = constant over z_k

In other words

- We let the influence of social origin free to vary over time + country + gender, while keeping the relative weight of each parental resource constant in respect to one another
- Imagining that father's education was twice as relevant as mother's education at the beginning of the 20th century, this relationship between the two components is bounded to remain stable over time
- What is free to vary is the influence of the latent variable (i.e., social origin) on education

Results

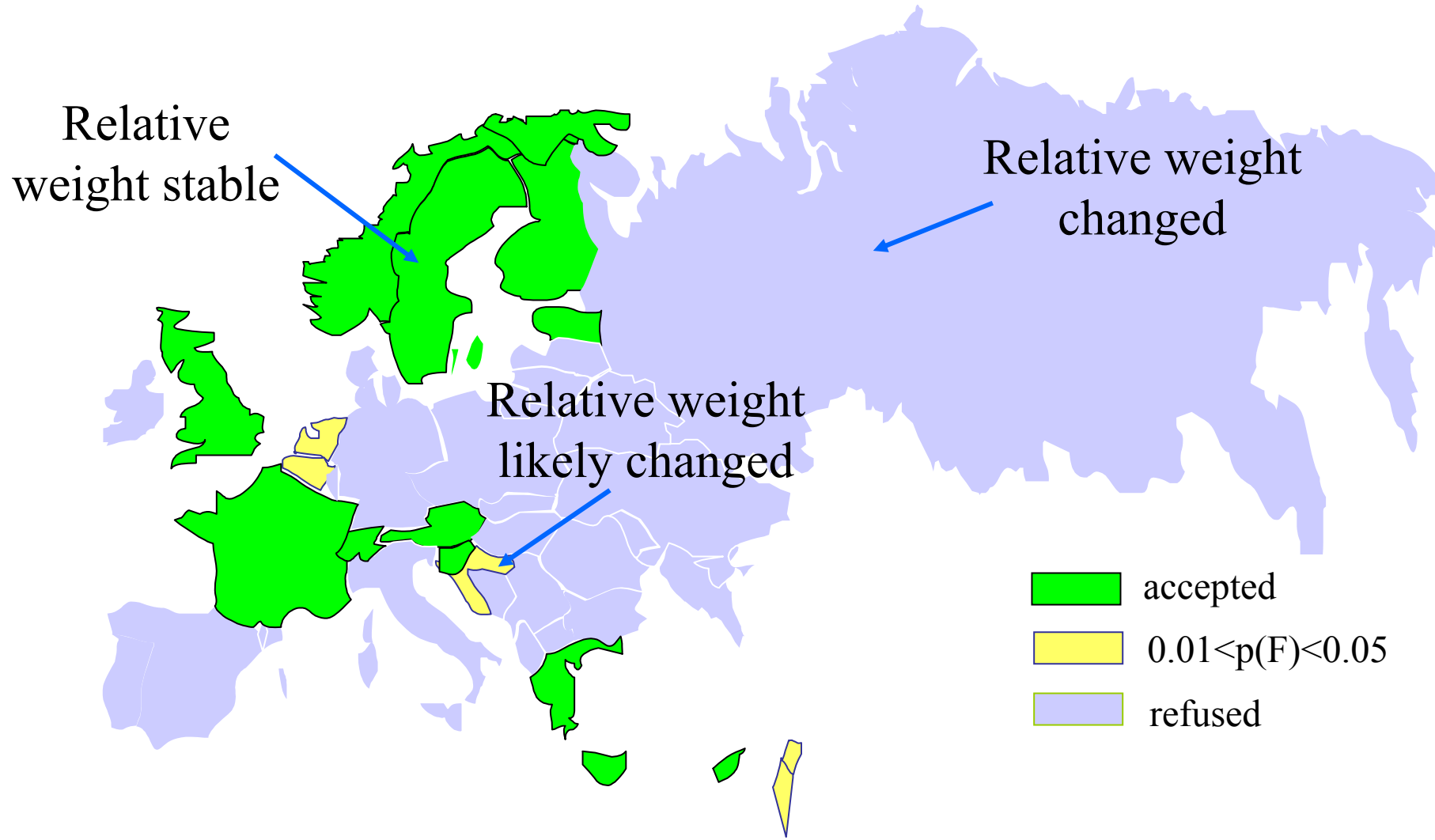
The pooled model

- The relative weight of parental resources did not remain stable over time in the 29 countries (hypothesis 1 confirmed)
  - The model estimated on the pooled sample was refused (F[4673, 148024]=1.52, p=0.00)
- This raises two questions:
  - Where did the change take place?
  - What are the differences between countries and genders over time?

The individual model

- To answer these questions, we re-estimated our model on each country separatedly
- Our results show that the individual model:
  - fits in 11 out of 29 countries (AT, CY, EE, FI, FR, GR, NO, SI, SE, CH, UK)
  - is almost fitting in 4 countries (BE, HR, IL, NL)
  - does not fit in the remaining 14 countries

Model fit by country



Some socio-political regularities

- The countries in which the model marginally fits (in italics), or does not fit at all, include:
  - Most of the former-Soviet countries (BG, CZ, HU, *HR*, PL, RU, SK, UA)
  - Some Central EU countries (*BE*, DE, IE, LU, *NL*)
  - Only one Scandinavian country (DK)
  - Most of the Southern EU countries (ES, *IL*, IT, PT)

Some socio-political regularities

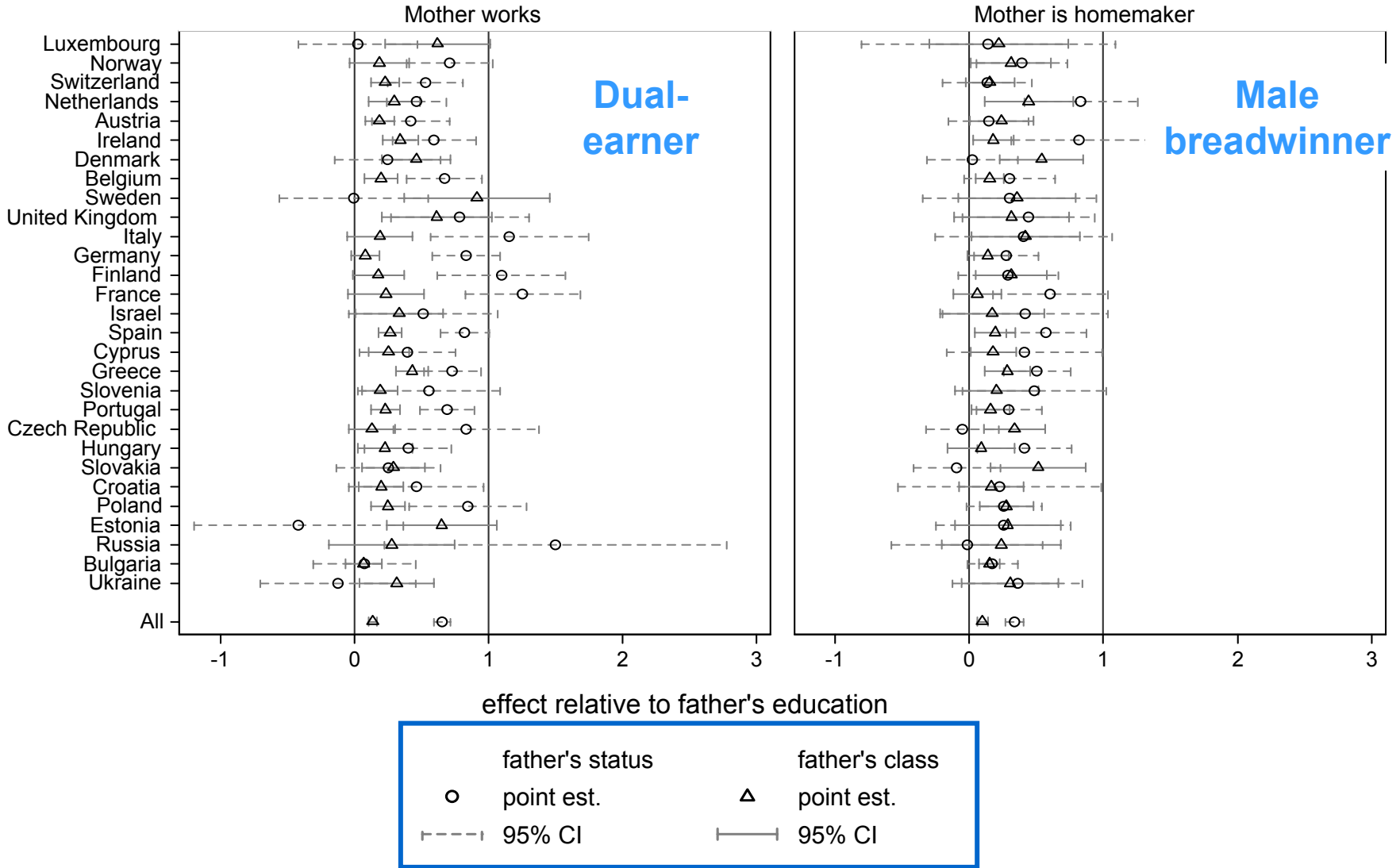
- The countries in which the model fits (ie., the relative weight of parental resources did not change) include:
  - Two Southern European countries (GR, CY)
  - Three Scandinavian countries (NO, SE, FI)
  - Four Central European countries (AT, CH, FR, UK)
  - (Only) two former-soviet countries (EE, SI)

A relevant result

- Though in most countries the model does not fit, we singled out 11 countries (AT, CY, EE, FI, FR, GR, NO, SI, SE, CH, UK) in which our extremely restrictive model fits
- This means that, in these countries:
  - The balance between components (education, status, class) and between parents remained stable over the 20th century, and in respect to gender
  - Cross-country variation occurred (since the pooled model did not fit)

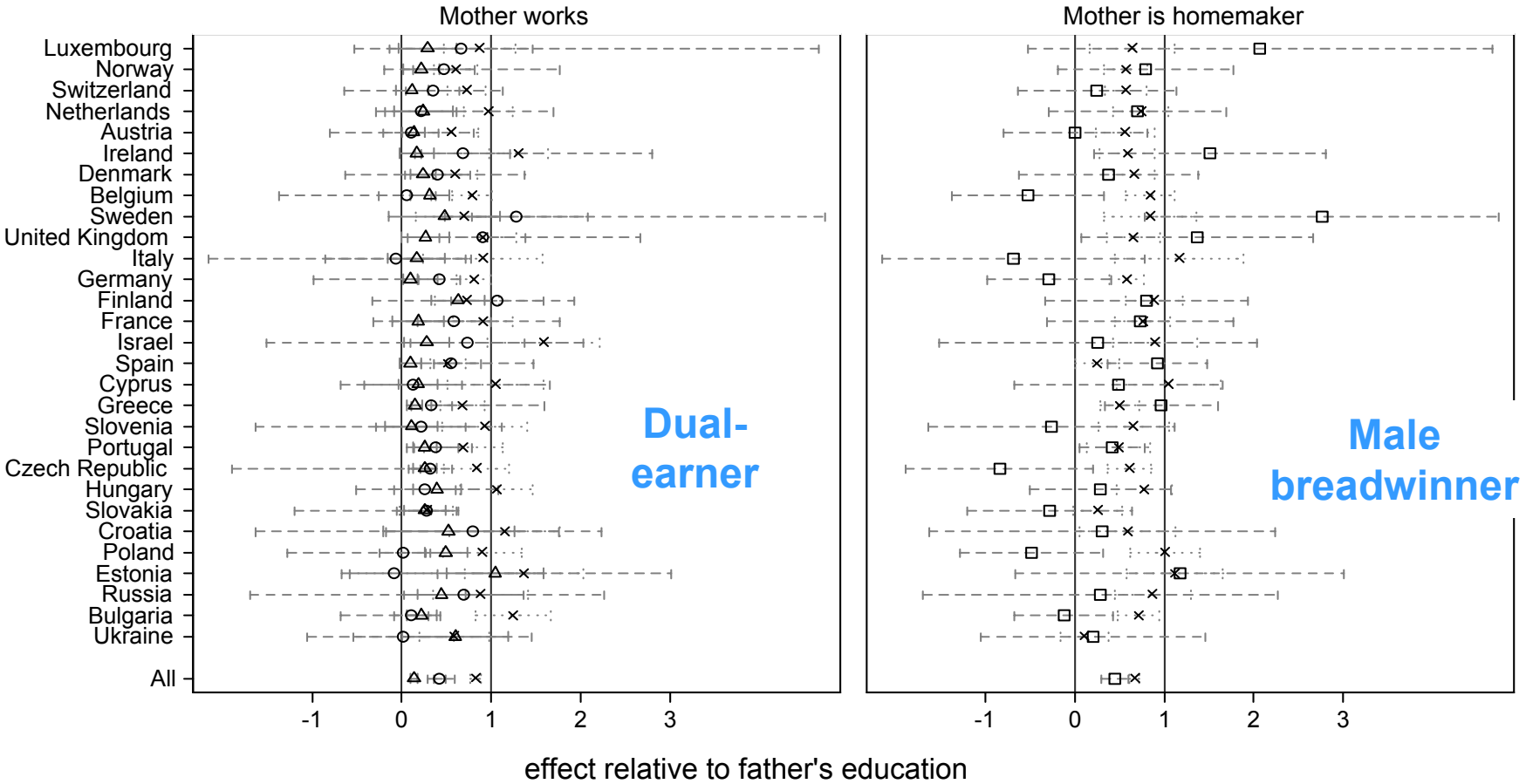
Parameter estimates (Father)

(countries ordered by GDP/capita)



Parameter estimates (Mother)

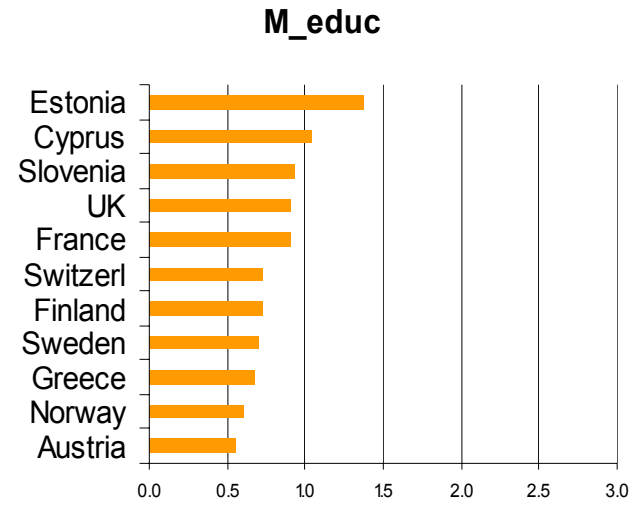
(countries ordered by GDP/capita)

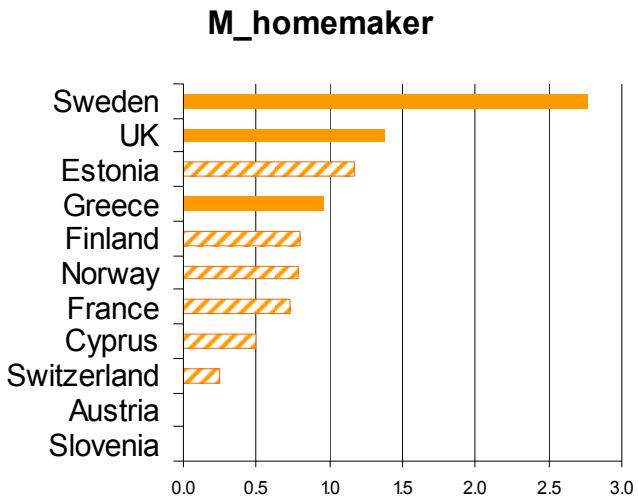


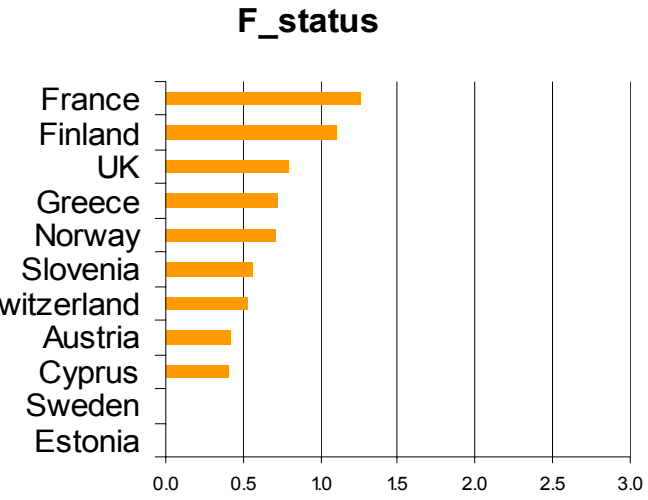
Parameter estimates

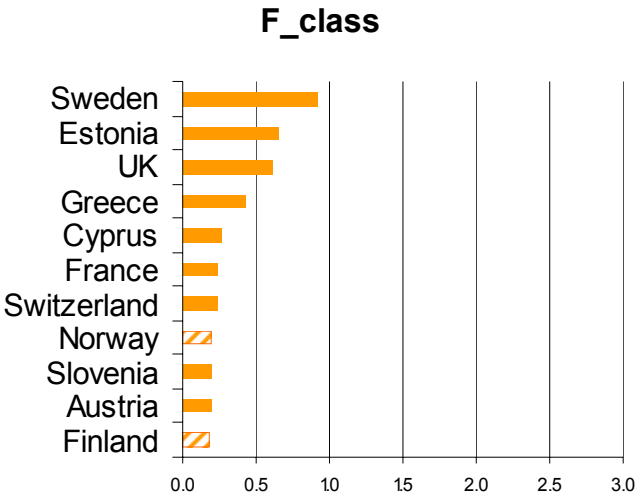
	Dual-earner						Male breadwinner			
	Father			Mother			Father		Mother	
	Education	Status	Class	Education	Status	Class	Status	Class	Education	Homemake
ustria	1	0.14	0.24	0.56	0.11	0.14	0.42	0.19	0.56	0.0
		0.15	*0.12*	*0.17*	*0.16*	*0.07*	*0.15*	*0.05*	*0.15*	*0.4*
yprus	1	0.41	0.18	1.05	0.13	0.19	0.40	0.26	1.05	0.4
		0.30	*0.09*	*0.30*	*0.28*	*0.11*	*0.18*	*0.08*	*0.28*	*0.6*
stonia	1	0.25	0.29	1.11	-0.09	0.11	-0.42	0.65	1.37	1.1
		0.26	*0.20*	*0.27*	*0.25*	*0.27*	*0.40*	*0.21*	*0.34*	*0.9*
inland	1	0.29	0.31	0.89	1.07	0.48	1.10	0.18	0.73	0.8
		0.19	*0.14*	*0.16*	*0.26*	*0.15*	*0.24*	*0.10*	*0.18*	*0.5*
rance	1	0.60	0.06	0.76	0.59	0.11	1.26	0.24	0.91	0.7
		0.19	*0.14*	*0.16*	*0.26*	*0.15*	*0.24*	*0.10*	*0.18*	*0.5*
reece	1	0.51	0.28	0.50	0.34	0.31	0.73	0.43	0.68	0.9
		0.13	*0.09*	*0.11*	*0.11*	*0.04*	*0.11*	*0.06*	*0.12*	*0.3*
orway	1	0.39	0.31	0.57	0.47	0.10	0.71	0.19	0.61	0.7
		0.17	*0.15*	*0.12*	*0.18*	*0.10*	*0.16*	*0.11*	*0.12*	*0.5*
lovenia	1	0.49	0.20	0.66	0.22	0.49	0.56	0.19	0.93	-0.2
		0.27	*0.16*	*0.20*	*0.26*	*0.15*	*0.27*	*0.07*	*0.24*	*0.7*
weden	1	0.30	0.36	0.84	1.28	0.45	0.00	0.92	0.70	2.7
		0.33	*0.22*	*0.26*	*0.41*	*0.32*	*0.28*	*0.28*	*0.28*	*1.0*
witzerland	1	0.13	0.15	0.57	0.35	0.26	0.53	0.23	0.73	0.2
		0.17	*0.09*	*0.12*	*0.15*	*0.09*		*0.14*	*0.11*	*0.4*
K	1	0.44	0.31	0.65	0.91	0.60		0.79	0.91	1.3

Male breadwinner origin



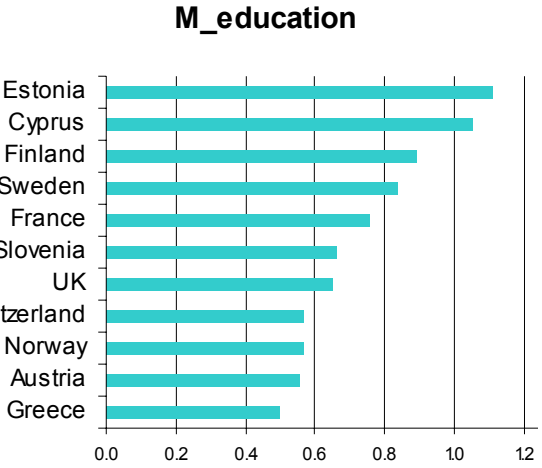


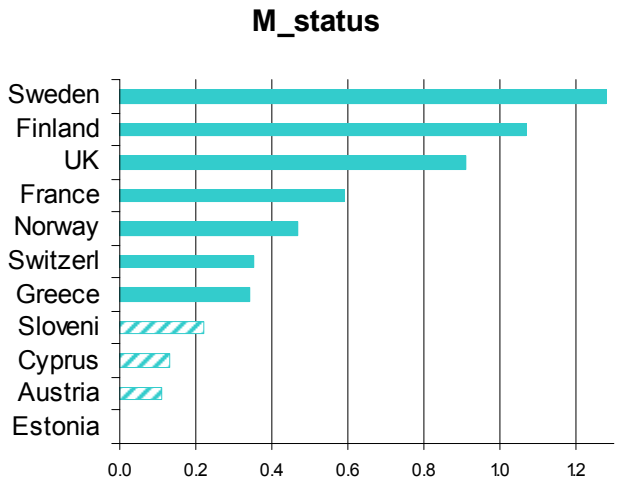




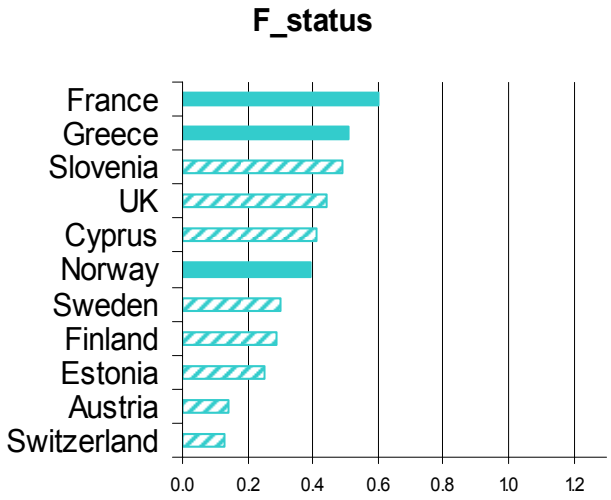
- Solid bars = p(t) < 0.01
- Parameters as % of F_educ

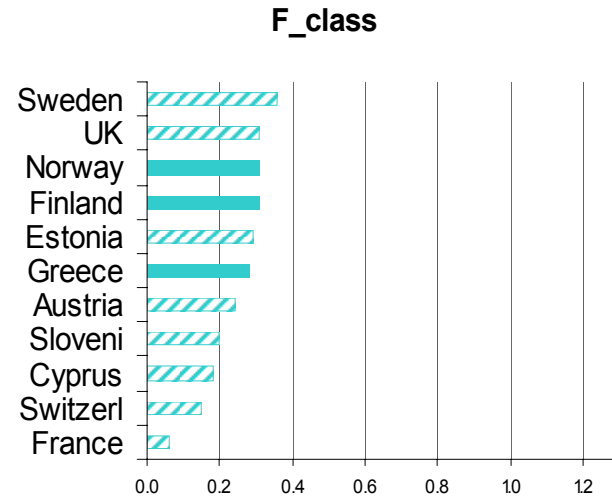
Dual-earner origin



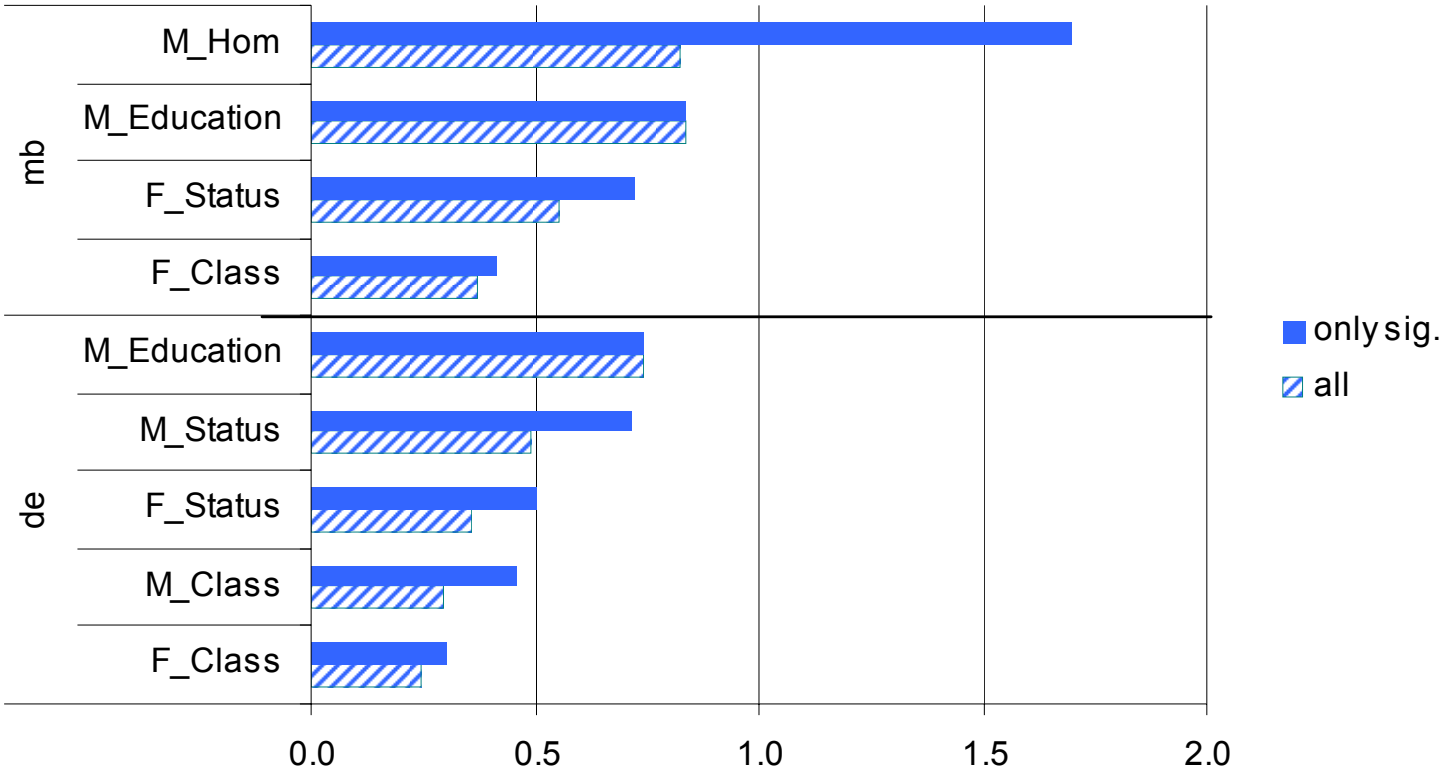


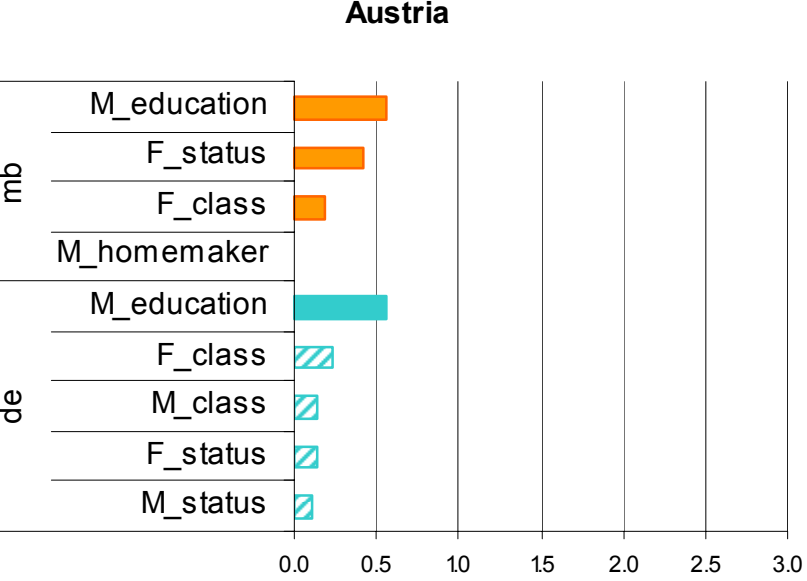
- Solid bars = p(t) < 0.01
- Parameters as % of F_educ

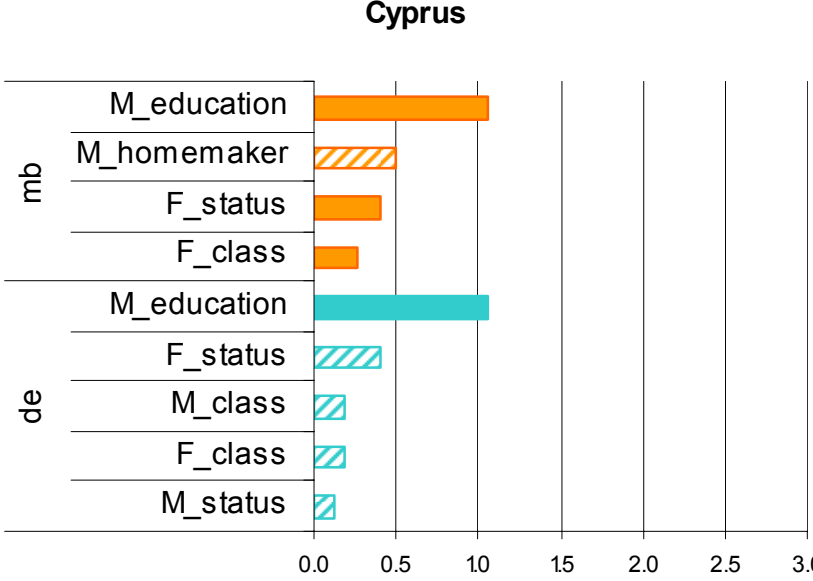


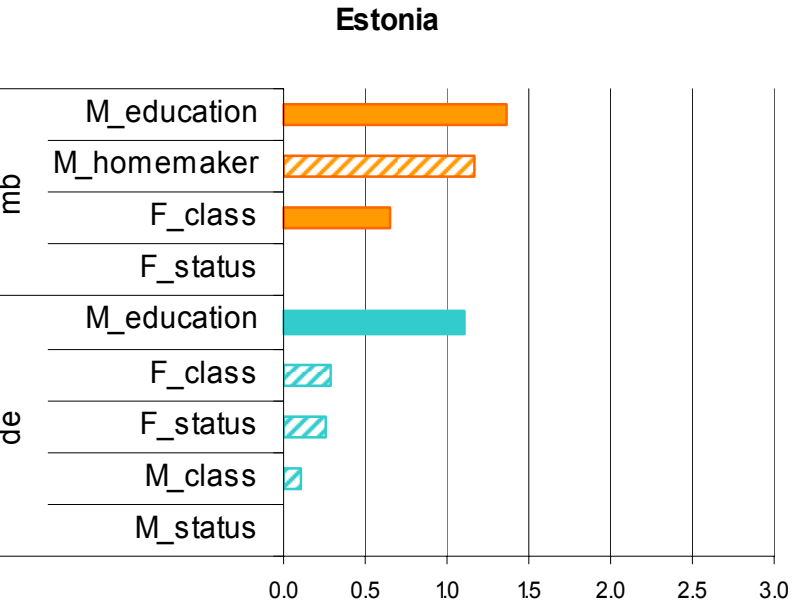


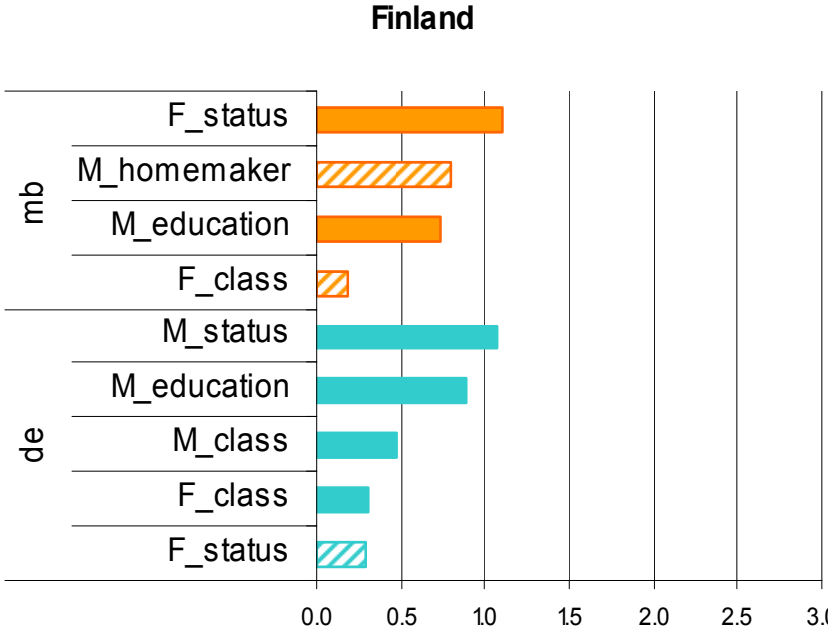
On average, by type of family



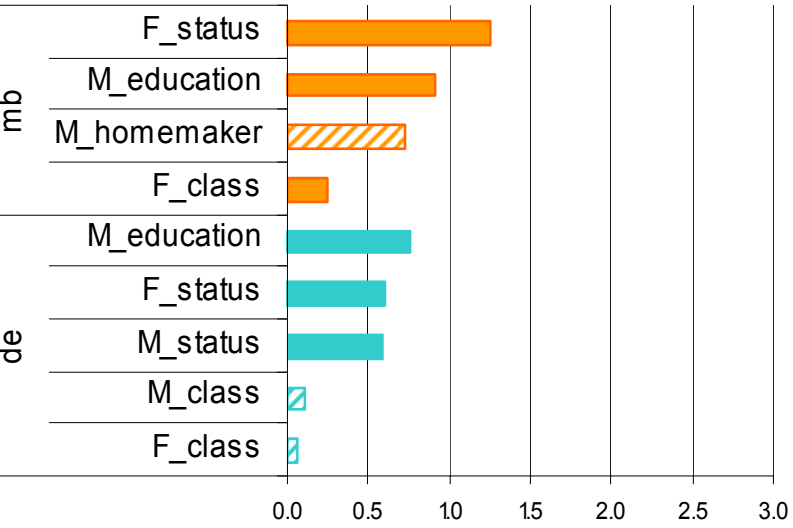

Austria
mb
M_education
F_status
F_class
M_homemaker
de
M_education
F_class
M_class
F_status
M_status
0.0
0.5
1.0
1.5
2.0
2.5
3.0


Cyprus
mb
M_education
M_homemaker
F_status
F_class
de
M_education
F_status
M_class
F_class
M_status
0.0
0.5
1.0
1.5
2.0
2.5

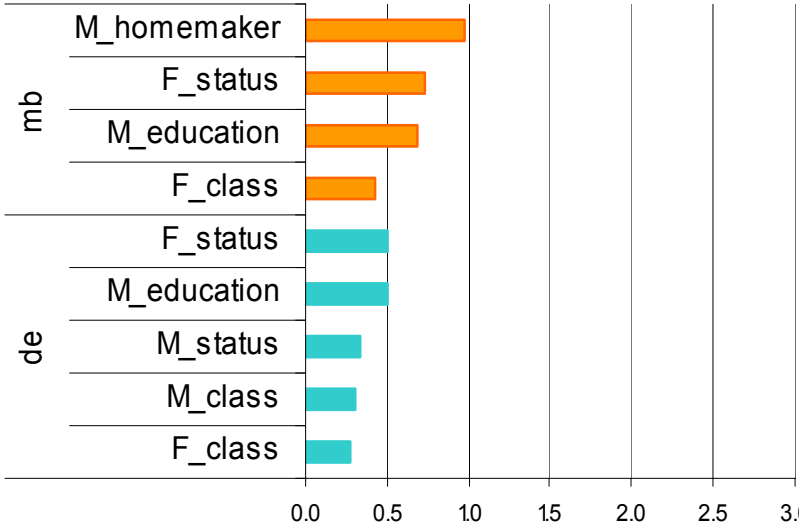

Estonia
mb
M_education
M_homemaker
F_class
F_status
de
M_education
F_class
F_status
M_class
M_status
0.0
0.5
1.0
1.5
2.0
2.5
3.0


Finland
mb
F_status
M_homemaker
M_education
F_class
de
M_status
M_education
M_class
F_class
F_status
0.0
0.5
1.0
1.5
2.0
2.5

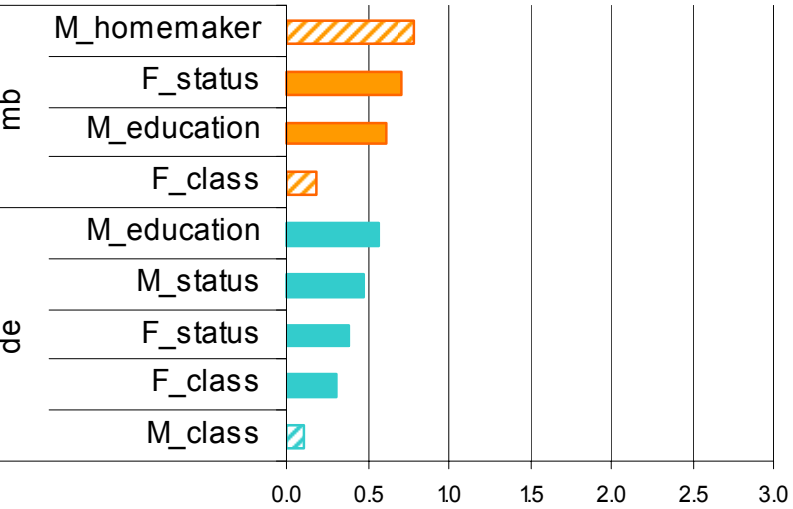
France



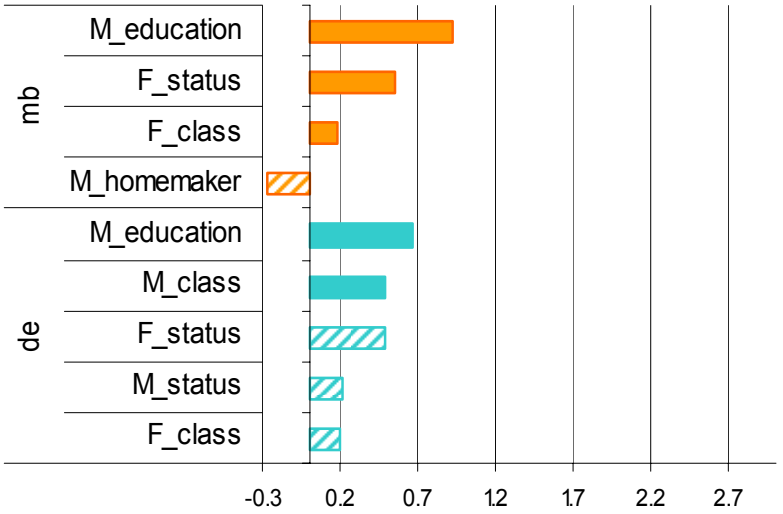
Greece

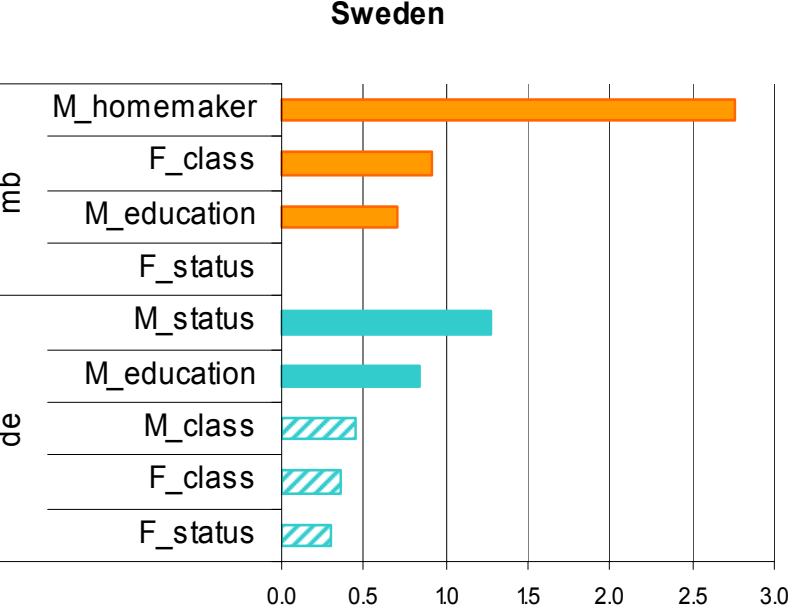


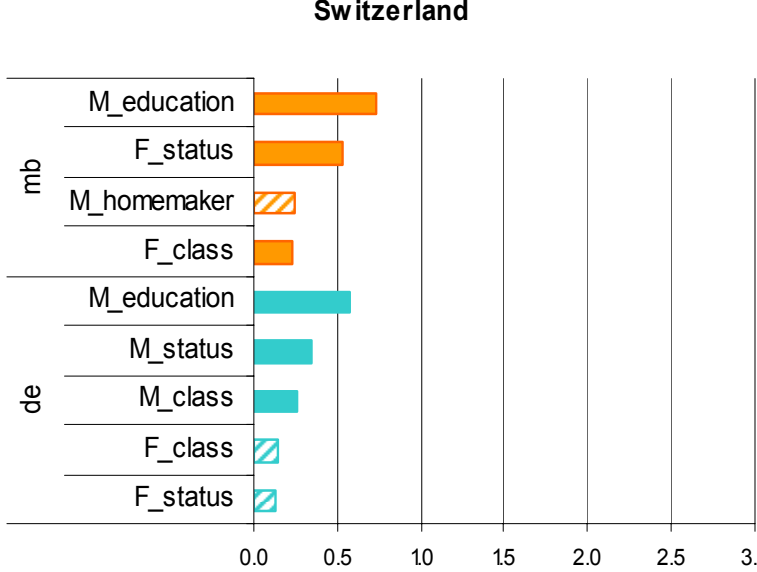
Norway

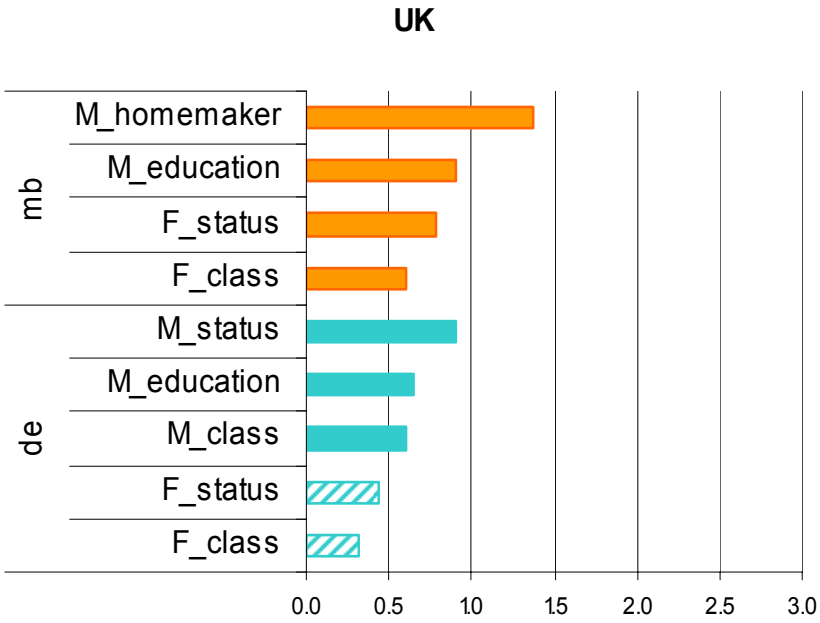


Slovenia




Sweden
mb
M_homemaker
F_class
M_education
F_status
de
M_status
M_education
M_class
F_class
F_status
0.0
0.5
1.0
1.5
2.0
2.5
3.0


Switzerland
mb
M_education
F_status
M_homemaker
F_class
de
M_education
M_status
M_class
F_class
F_status
0.0
0.5
1.0
1.5
2.0
2.5


UK
mb
M_homemaker
M_education
F_status
F_class
de
M_status
M_education
M_class
F_status
F_class
0.0
0.5
1.0
1.5
2.0
2.5
3.0

Status, class or education?

- In many countries more than one resource matters (hypothesis 2 partially confirmed)
- The relevance of the type of resource (education, status, class) depends on which parent brings it to the family, and hence on the type of origin
- Male breadwinner origins:
  - All resources matter (exception are the Nordic countries: SE, EE, where F_status is not sign., and NO, FI, where F_class is not sign.)
  - On average, M_educ matters more than F_status and F_class
  - F_status matters everywhere but in Sweden and Estonia
  - F_class (sheaf coeff.) matters everywhere but Norway and Finland
- Dual_earner origins:
  - Education of both parents always matters
  - Status matters, but most often when it's mother's status
  - Class matters less, however on average it matters more when it is mother's
  - F_status and F_class matter only in few countries (respectively, FR, GR, NO, and FI, GR, NO)
  - M_status is not relevant in SI, CY, AT, EE
  - M_class is relevant only in UK, SI, FI, CH

Father and mother?

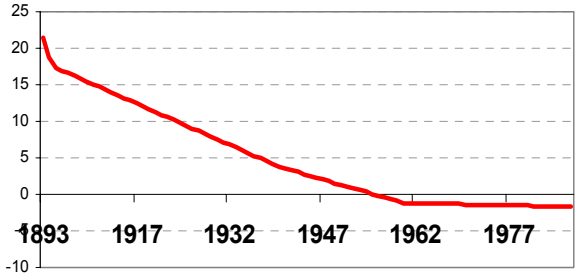
- Mothers have a specific role, both in male breadwinner and in dual-earner families (hypothesis 3 confirmed)
  - Mother's education always matters (together with father's education), both in male breadwinner and in dual-earner families of origin
  - Mother's education is the second most relevant resource, after father's education, in 8 of the 11 countries, three exceptions being FI, SE and UK, where maternal status – instead than education – comes second, after father's education
- The influence of maternal education is higher in male breadwinner families of origin than in dual-earner ones, with the exception of FI and SE (hypothesis 3.1 partially confirmed)

The IEO trend over time

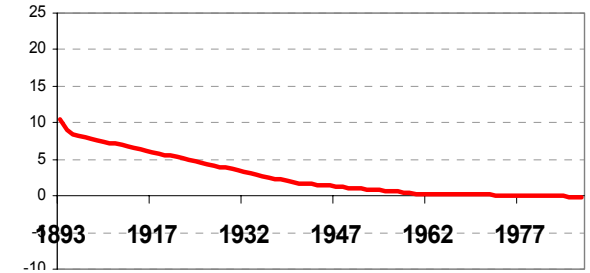
- IEO decreased in the 11 countries considered (hypothesis 4 confirmed), notwithstanding the overall stability of the mix of parental resources
- This opens the way to questions about the causal mechanisms that allowed IEO to decrease: modernization / state intervention / … → future research!
- Gender seems not to be a crucial variable in shaping the dynamics of IEO over time

IEO trend by country, Group 1

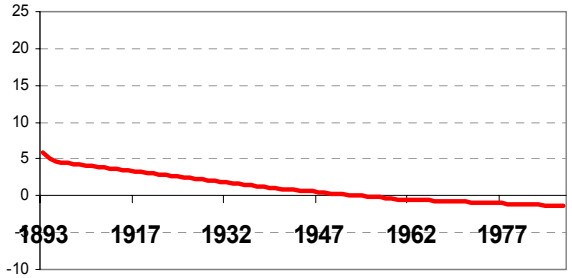
CY



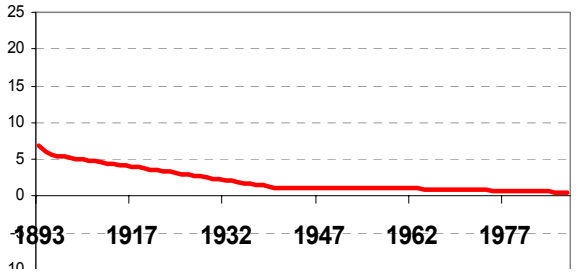
AT



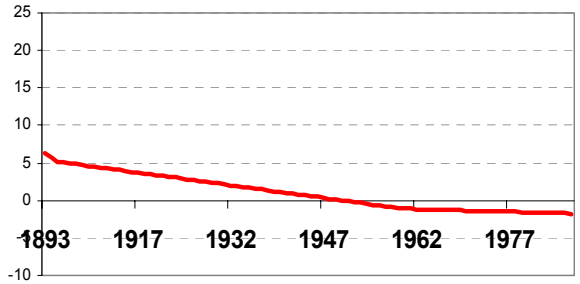
FR



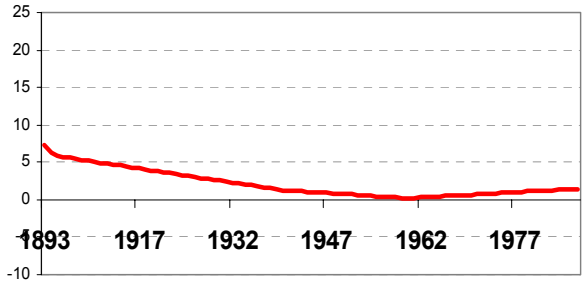
UK



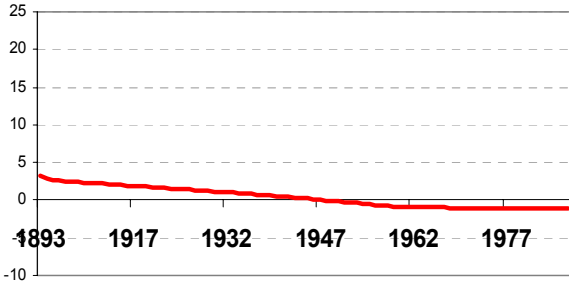
SE



EE

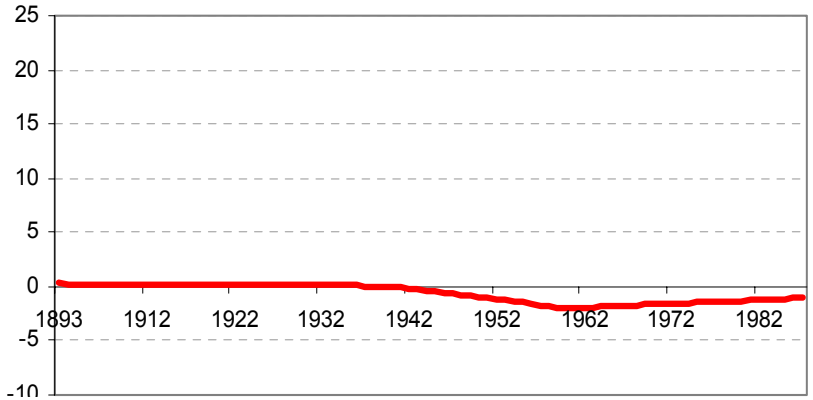


CH

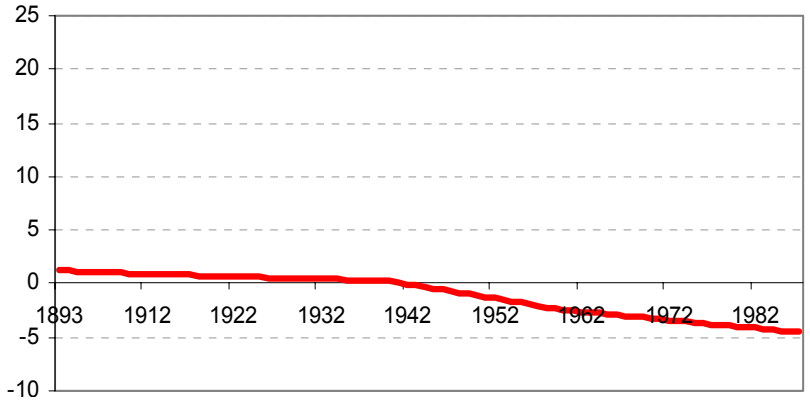


IEO trend by country, Group 2

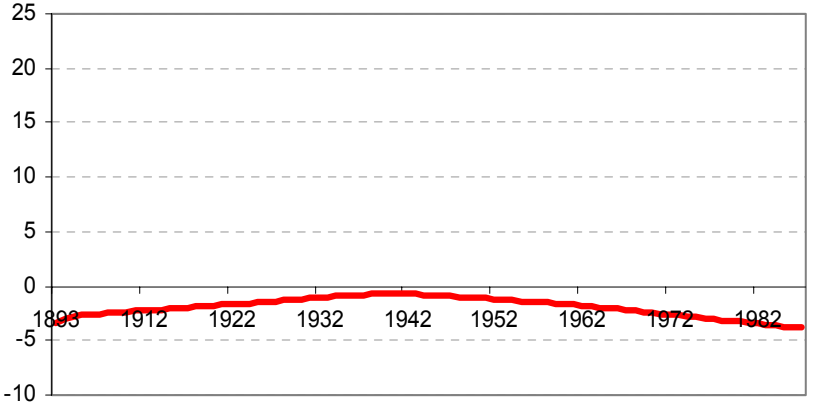
NO



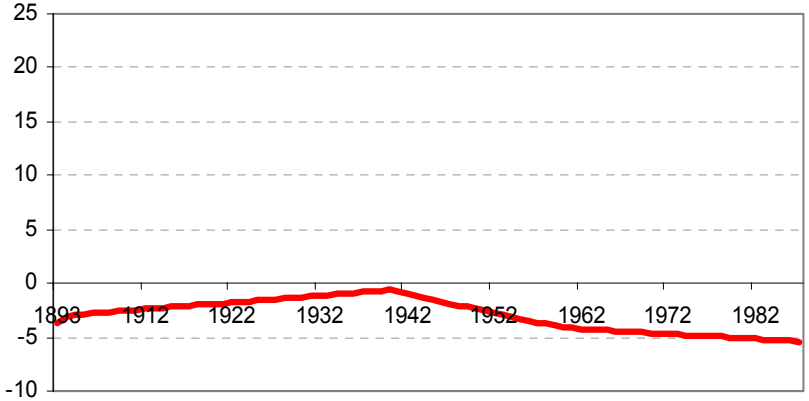
FI



SI



GR



In sum

- There is no single pattern summarizing what happened across Europe over the 20th century
  - However some similarities can be found (among the 11 countries) as for the IEO trend over time: it seems that a common goal (reduction of inequalities) has been pursued and attained by means of a resource mix varying by country
- As for the three components:
  - The cultural dimension (indexed by education) proves to be the key factor for understanding IEO
  - Class matters less than the other resources, especially in dual-earner families
  - Social status stands in the middle, with maternal status (in D-E families) being on average more influential than paternal status
- As for mothers' influence:
  - Mothers make a difference in male breadwinner families of origin *via* their education
  - Mothers also make a difference in dual-earner families of origin, especially *via* education and social status

Conclusions

- When investigating IEO, it is a sensible choice to model maternal influence, besides paternal one
- This holds for both male breadwinner and dual-earner families of origin
- It follows that, by overlooking mother's influence (which is not marginal at all), we likely bias our results
- Our results show that it is parental education (not occupation) the most influential resource for the offspring's educational attainment

A couple of advices

- In case we want to use just one type of resource to model social origin, we should consider replacing parental occupation with education
- Not all mothers have a job, but all mother have an education, so let's consider using this information (available in many data sets)
  - The dominance approach is not effective: in our data, only 25% of mothers on average have a better social status than fathers
  - In some countries (Ireland, Italy, Spain) this proportion gets as low as 12%-14%; at the opposite end, in some of the former communist countries (Czech Republic, Estonia, Russia) it gets as high as 43%-48%
  - Problem solves if we use mother's education!

Thank you!

cinzia.meraviglia@unimi.it