

TIME INVESTMENTS IN CHILDREN IN THE UK: THE ROLE OF COLLEGE COMPETITION

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July 8th, 2014

6th Research Methods Festival 2014

Using Secondary Analysis to Research Social Diversity and Population Dynamics
University of Oxford

QUESTION

- Can competition for college admissions explain the different trends in parental time investments by parents with different educational attainment in the UK?

MOTIVATION

- In the US: Increase in differentials in time investments by education (Ramey and Ramey, 2010)
 - College educated mothers invested just 1 hour per week more than less-than-college educated mothers in 1985, but were investing 5 more hours per week in 2003
 - College educated fathers invested 30 min per week more in 1985 than less-than-college educated fathers, but were devoting 2 and a half hour per week more in 2003
 - An important part of rising childcare differentials between college and non-college educated parents due to travel and activities of older children

MOTIVATION

- In the US: Coincident with increases in college competition for elite universities (Ramey and Ramey 2010).
 - Children of the baby boom
 - Non-increasing supply of college slots at elite universities => 'rug rat race' among the college educated to place their children at elite universities

WHY DO WE CARE?

- Crucial from a child development perspective:
 - => 1 hour more of maternal childcare per week increases test scores, moving a child about five positions up in a class of 30 (Villena-Roldán and Ríos-Aguilar, 2012)
- Crucial for policies aimed at inequality:
 - => Growing inequality in children's (time and money) resources
- Competition for college at elite universities among the college educated => wasteful overinvestment in preparation (Ramey and Ramey 2010)

FINDINGS

- Competition for college admissions supported by evidence also in the UK
 - Increase in the differential parental time investments during a period coinciding with increased competition for college slots
- However larger emphasis on human-capital enhancing activities in the UK than in the US
 - College educated parents spent differentially more time in college-related activities in the 2000s than in the 80s
 - Children of college educated parents spent differentially more time in homework and study in the 2000s than in the 80s
- Mixed evidence for the rest of the countries

CONTRIBUTIONS

- Test the competition for college admissions explanation in the UK:
 - Ramey and Ramey (2010) focused on the US and compared the results to those of Canada
 - The higher education system in the UK is closer to that of the US because is a national market and shows a hierarchy of universities
- Complement Ramey and Ramey (2010) by looking at children's use of time in the US and the UK
- Assess whether we can extrapolate from US findings by documenting the trends in the education gradient across a variety of developed countries over the last five decades

DATA: UK TIME DIARY SURVEY

DATA : MTUS

- UK: 1975, 1983, 1995, 2000, 2005
- Multinational Time Use Study (MTUS):
 - Ex post harmonized cross-time, cross-national comparative time use database, constructed from national random-sampled time-diary
 - Comparability over time made possible by harmonization
 - For the 1995 and 2005 light diaries: comparisons among education groups, still valid.
- Main sample: mothers and fathers aged 18 to 64 who are neither retired nor students, having a child 5 or older and younger than 18 years old in the household

VARIABLES OF INTEREST

- Parental time investments in children: Primary activity reported as caring for his or her child/children (hours per week)
 - Coded AV11 in MTUS (food preparation for children; putting children to bed or getting them up; medical care of children; reading to, or playing with children; helping children with homework; supervising children)
- College educated: If the respondent reports to have some college or more (ISCED level 5 or above)
 - Harmonised to make it comparable across surveys
 - In the UK, some college or more includes university degree and higher education below degree level (further education and nursing qualification, for instance)

EMPIRICAL SPECIFICATION

- OLS, separately for fathers and mothers:

$$CT_{it} = X_{it}\beta + \varepsilon_{it}$$

- CT_{it} is parental time investments in hours per week of individual i from survey t
- X_{it} includes:
 - year of the survey dummies
 - college education dummy
 - interaction of college education with the survey years
 - a vector of additional individual characteristics (age group dummies, marriage dummy, and a quadratic in the number of children)
- ε_{it} is the error term

RESULTS

TRENDS IN PARENTAL TIME INVESTMENTS BY EDUCATIONAL ATTAINMENT (UK, 1974-2005)

	Mothers (1)	Fathers (2)
A. Year dummies		
year_1974	-1.04*** (0.057)	-0.49*** (0.031)
year_1983	ref.	ref.
year_1995	4.39*** (0.067)	2.27*** (0.055)
year_2000	1.12*** (0.030)	0.60*** (0.041)
year_2005	4.73*** (0.080)	3.39*** (0.025)
B. College educated		
Some college or more	1.39*** (0.031)	-0.40*** (0.084)
C. Interaction terms		
Some college*year_1974	-0.76*** (0.048)	0.56*** (0.075)
Some college*year_1983	ref.	ref.
Some college*year_1995	2.19*** (0.063)	1.35*** (0.173)
Some college*year_2000	-0.71*** (0.019)	0.56*** (0.103)
Some college*year_2005	-1.41*** (0.024)	-0.16 (0.084)
constant	2.23** (0.679)	1.69 (1.082)

Notes: The regression is $CT_{it} = X_{it}\beta + \varepsilon_{it}$, where where CT_{it} is total time in hours per week devoted to childcare by individual i from survey t , and ε_{it} is the error term, X_{it} is a set of controls, including a college education dummy, year of the survey dummies, the interaction of the college education dummy with the survey year and additional controls parents' ages, marital status, a quadratic in the number of children, and a vector of dummies to control for the day of the week the diary was reported, ref. 24-35 year-olds, Sunday). The samples include mothers (fathers) 18-64 who are not students or retired, co-resident with at least a child 5-17 in the house and no children under 5. The omitted year is labelled ref. in each column. Robust standard errors (in parentheses) clustered by survey. ***, **, * significant at the 1, 5, 10% level Source: MTUS (1974-2005)

TRENDS IN PARENTAL TIME INVESTMENTS BY EDUCATION. UK (1974-2005)

- For mothers: positive gap larger than one hour per week for most of the period
 - consistent in sign and in magnitude with previous analysis reported for the UK (Guryan et al. 2008).
- For mothers: large increase in the differential from the 70s (1 h/week), peaking during the mid-80's to mid-90's (3.5 h/week), and fading away towards the end of the period (0 h/week).
 - For the US large increases in differentials from the mid-1990's onwards (from 3 h/week to 6 h/week) (Ramey and Ramey 2010)
 - Absolute numbers however are larger in the UK
- For fathers: same pattern, smaller figures.

TYPES OF PARENTAL TIME INVESTMENTS

- Categories (Ramey and Ramey, 2010):
 - General Care: Physical or medical care of child Supervise, accompany, other child care.
 - Teaching Care: Teach, help with homework.
 - Playing Care: Read to, talk to, play with child.
- MTUS data for 1983 and 2000
- Unable to construct Travel care

TYPES OF PARENTAL TIME INVESTMENTS. UK (1983-2000)

	Mothers			Fathers		
	(1) General	(2) Teaching	(3) Playing	(4) General	(5) Teaching	(6) Playing
A. Year dummies						
year_1974						
year_1983	ref.	ref.	ref.	ref.	ref.	ref.
year_2000	0.64** (0.018)	0.21** (0.005)	0.73** (0.021)	0.23** (0.005)	0.12** (0.004)	0.38** (0.020)
B. College educated						
Some college or more	0.78** (0.044)	0.15*** (0.002)	0.42** (0.013)	-0.37** (0.022)	-0.02 (0.010)	-0.09 (0.037)
C. Interaction terms						
Some college*year_1974						
Some college*year_1983	ref.	ref.	ref.	ref.	ref.	ref.
Some college*year_2000	-1.27*** (0.001)	0.32** (0.011)	-0.14 (0.031)	0.43** (0.010)	0.05* (0.005)	0.04 (0.047)
constant	2.07 (0.523)	-0.31 (0.381)	0.69 (0.271)	0.07 (0.104)	0.04 (0.122)	0.55 (0.343)

Notes: This table show the regression of weekly hours spent on general care (main 28 and 31: Columns 1 and 4), teaching care (main 29: Columns 2 and 5), and playing care (main 30: Columns 3 and 6) on the variables of interest. The samples include mothers (fathers) 18-64 who are not students or retired, co-resident with children aged 5-17, no child under the age of 5 in the house. The omitted year is labelled ref. in each column. Controls for parents' ages, marital status, a quadratic in the number of children, and a vector of dummies to control for the day of the week the diary was reported (ref.: Sunday). Standard errors in parentheses. * significant at 10% ** significant at 5%; *** significant at 1%. Source: MTUS (1974-2005)

TYPES OF PARENTAL TIME INVESTMENTS. UK (1983-2000)

- Convergence in total childcare but increased divergence in teaching care: (40 min/week increase in gaps)
- By the end of the period: college educated mothers devote 30 more min/week to teaching than non-college mothers.
- In the US the diverging trends in parental time investments for college and non-college educated parents come basically from travel and extra curricular activities by college-educated parents (Ramey and Ramey, 2010)
- One more hour per week spent in educational activities instead of general care can increase children's test scores by an additional 3% of a standard deviation, moving a child about one more position in a class of 50 (Fiorini & Keane 2012).

OLDER CHILDREN'S TIME USE

- Children's diaries in the MTUS that interviewed all family members to match maternal education
 - UK: 1974, 1983, and 2000 surveys
- Samples selected to allow comparisons:
 - 14 to 17 years old in the UK
- Variable:
 - **Homework** (av33): Study and homework.

CHILDREN'S HOMEWORK TIME. UK (1974-2005)

	Girls	Boys
	(1)	(2)
A. Year dummies		
year_1974	-3.01*** (0.086)	-2.15*** (0.083)
year_1983	ref.	ref.
year_2000	0.96*** (0.073)	3.03*** (0.161)
B. College educated		
Some college or more	2.45** (0.289)	6.79*** (0.256)
C. Interaction terms		
Some college*year_1974	-2.46*** (0.113)	-6.98*** (0.429)
Some college*year_1983	ref.	ref.
Some college*year_2000	4.39*** (0.338)	-4.70*** (0.312)
constant	9.11 (4.719)	1.17 (4.628)

This Table shows the regression of weekly hours spent on homework and study (av33) on the variables of interest. The samples include all children 14-17. Controls are age and sex of the child and a vector of dummies to control for the day of the week the diary was reported (ref.: Sunday). The omitted year is labelled ref. in each column.

Standard errors in parentheses. * significant at 10% ** significant at 5%; *** significant at 1%.

Source: MTUS (1971-2008)

CHILDREN'S HOMEWORK TIME

- For the UK:
 - In the 70s children devoted the same amount of time to homework regardless of their parents educational background
 - In 2000 children from more educated family backgrounds spent 1.5 times more time than children from less educated family backgrounds.
- For the United States: no increasing divergence in the time spent in homework by educational background.

ALTERNATIVE EXPLANATIONS

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- Parents and non-parents => Find same pattern => rule out selection into parenthood
- Income as an additional regressor => income is not significant and trends remain => rule out income effects
- Working and non-working mothers => Same pattern => rule out changing working practices
- Define highly educated as top 30 percent => Find same pattern => rule out changing composition of college educated
- Safety fears from International Crime Victims Survey (1989, 1996, 2000, 2004) and estimate model similar to main equation => Find college educated systematically lower fears than non-college => Rule out safety concerns

COLLEGE COMPETITION

THEORETICAL FRAMEWORK

(Ramey and Ramey, 2010)

- Returns to investment in children from college-educated parents may be higher
- When competition for college increases
 - children of the less than college educated parents are completely driven from the first tier universities
 - college educated parents are forced to increase time investments in their children

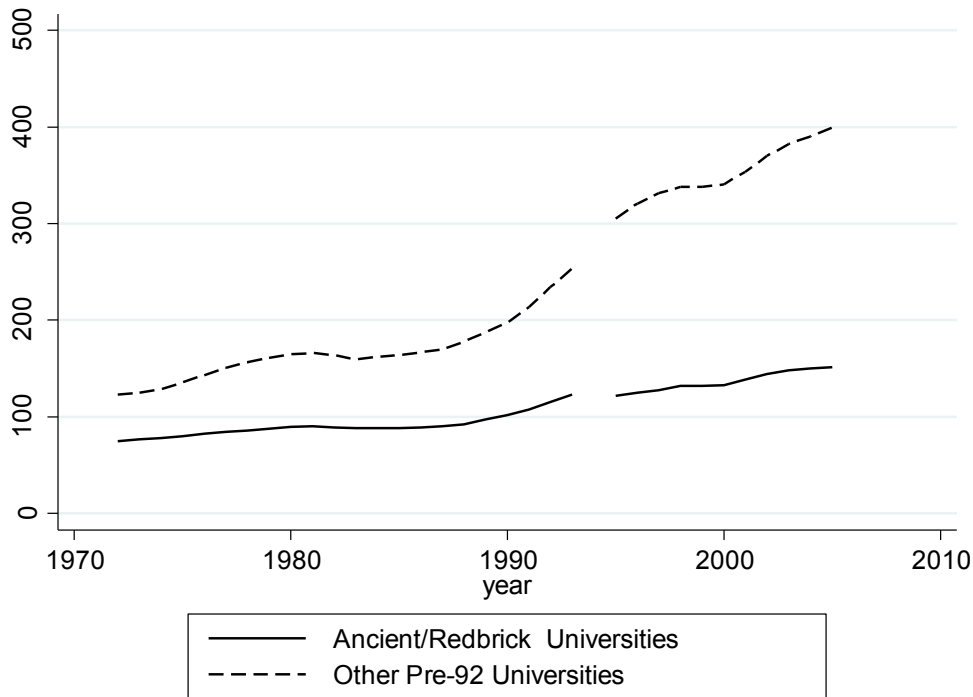
COLLEGE COMPETITION IN THE UK AND THE US

- Compared to US
 - Similar HE systems:
 - national market for college (Hoxby 2009, Abbot and Lesley 2004);
 - steep hierarchy of institutions the Ivy League Plus-US (Hoxby 2009, Bound et al. 2009) and Ancient and Redbrick Universities-UK (Halsey 2012);
 - returns to attending elite institutions (Hussain et al. 2009).
- => College competition also plausible explanation in the UK

COLLEGE COMPETITION IN THE UK AND THE US

- Compared to the US, UK higher education admission process:
 - More centrally coordinated in the UK through UCAS (Podthavee and Vignoles 2009)
 - More meritocratic in the UK (Jerrim et al. 2012, Bhattacharya et al. 2012)
- => More emphasis in human-capital enhancing activities in the UK

FULL-TIME HIGHER EDUCATION ENROLMENT AT ELITE UNIVERSITIES (ANCIENTS & REDBRICK) AND OTHER PRE-92 UNIVERSITIES



Notes: Ancients are Oxford, Cambridge, St. Andrews, Glasgow, Aberdeen, Edingburg, all founded in the Middle Ages. Redbrick Universities are Birmingham, Liverpool, Manchester, Leeds, Sheffield, Bristol, founded in the major industrial cities of England before World War I.

Source: University Statistical Records Microdata (1972-1993) and Higher Education Statistical Agency (1995-2005).

DEMAND FOR AND SUPPLY OF COLLEGE SLOTS AT SELECTIVE INSTITUTIONS

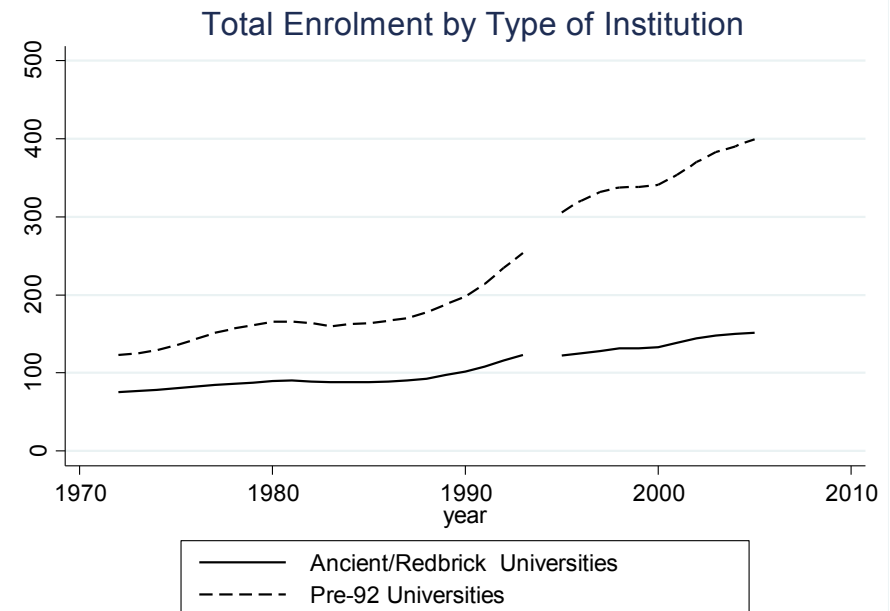
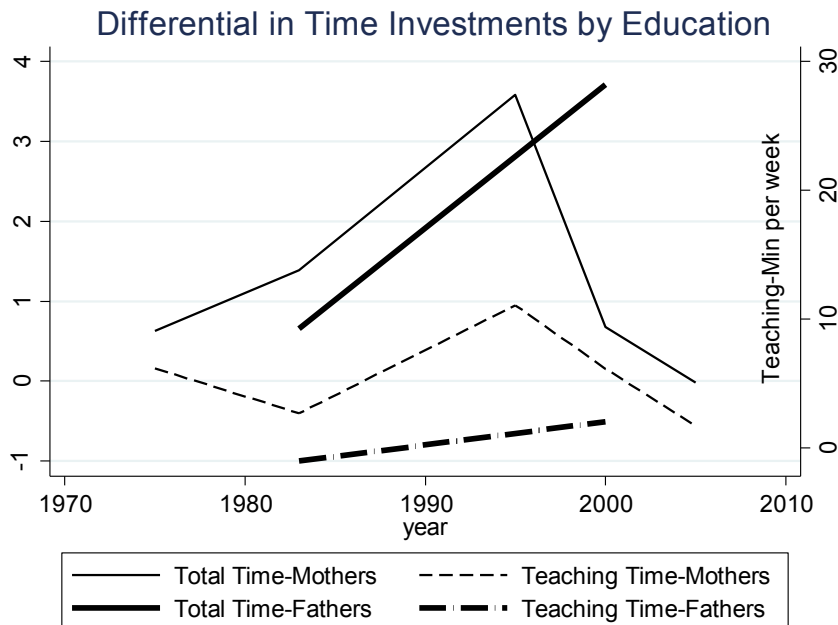
- Continuous increase in higher education participation from mid-70's to mid-80's
 - Steady increasing path in the rate of students staying on beyond the compulsory school leaving age (Blanden and Machin 2004)
- Steep rise in student numbers from late 80's until mid 90's not matched by increases in supply
 - introduction of the General Certificate of Secondary Education (GCSE) => much faster growth in staying on rates (Blanden and Machin 2004 and Walker and Zhu 2008)

DEMAND FOR AND SUPPLY OF COLLEGE SLOTS AT SELECTIVE INSTITUTIONS

- After the mid-90's, increase in supply but competition for elite institution remains
 - 1992 Further and Higher Education Act which granted university status to 48 former polytechnics
 - constant proportion of pupils staying on at school
 - Non negligible wage premiums of about 6% for studying at elite institutions (HEFCE 2001; Hussain et al. 2009).

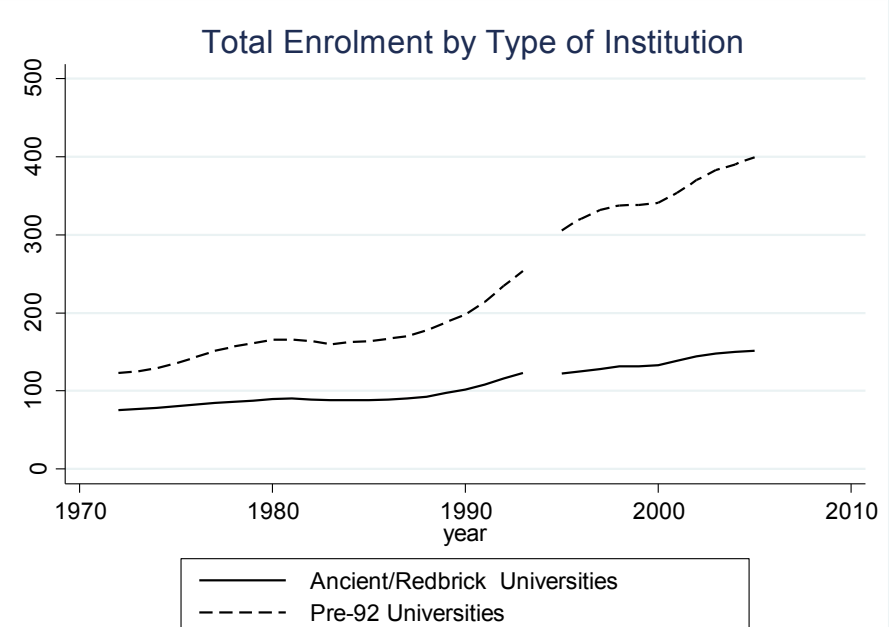
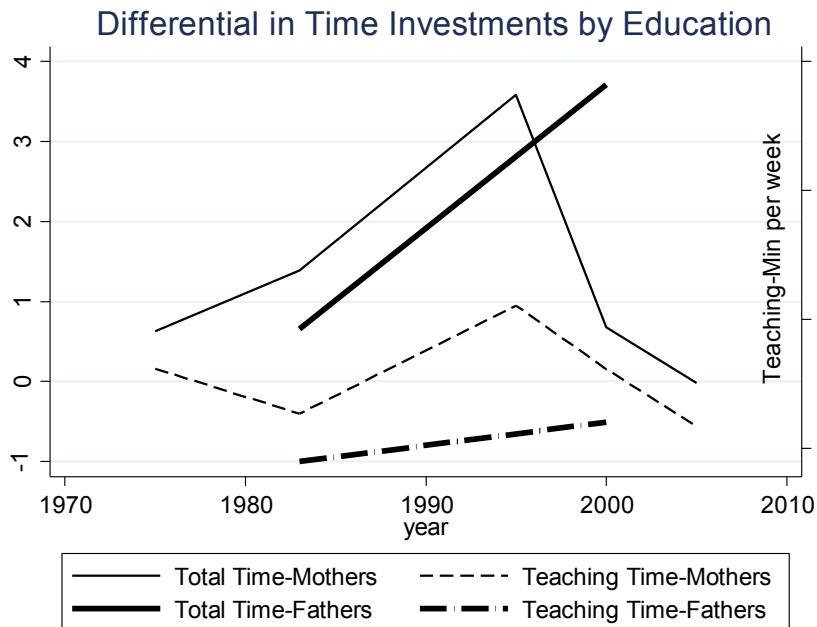
DEMAND FOR AND SUPPLY OF COLLEGE SLOTS AT SELECTIVE INSTITUTIONS AND PARENTAL TIME INVESTMENTS

- Mid 70's –mid-80's: Modest increase in maternal differentials in time investments by education: from 1 hour in 1974 to 1h 20 min/ week in 1983.
 - Coincident with steady increases in HE participation and competition: from 37% students at elite in 1974 to 35% in 1983.



DEMAND FOR AND SUPPLY OF COLLEGE SLOTS AT SELECTIVE INSTITUTIONS AND PARENTAL TIME INVESTMENTS

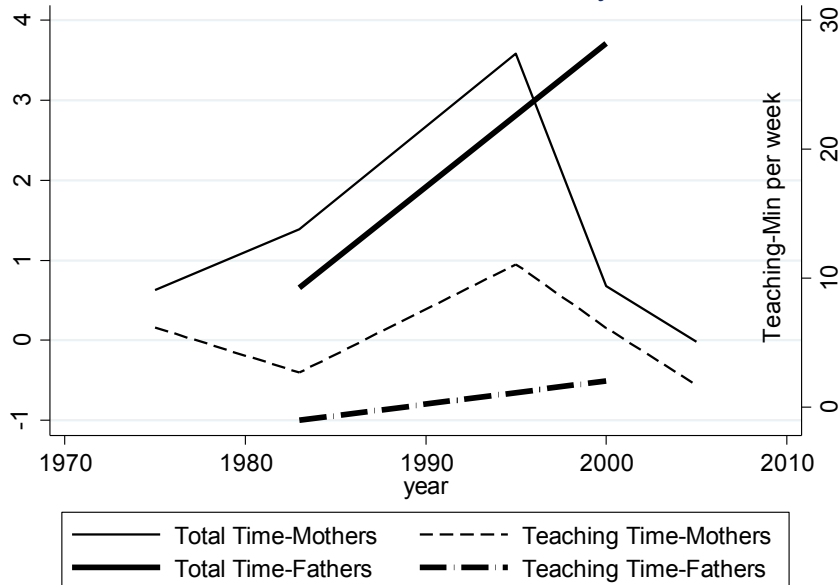
- Mid 80's –mid-90's: Very large increase in differentials: from 1h 20 min/week in 1983 to 3.5 hours/week in 1995
- Coincident with steep increases in student numbers and competition at elite institutions: from 35% to 28% in 1995.



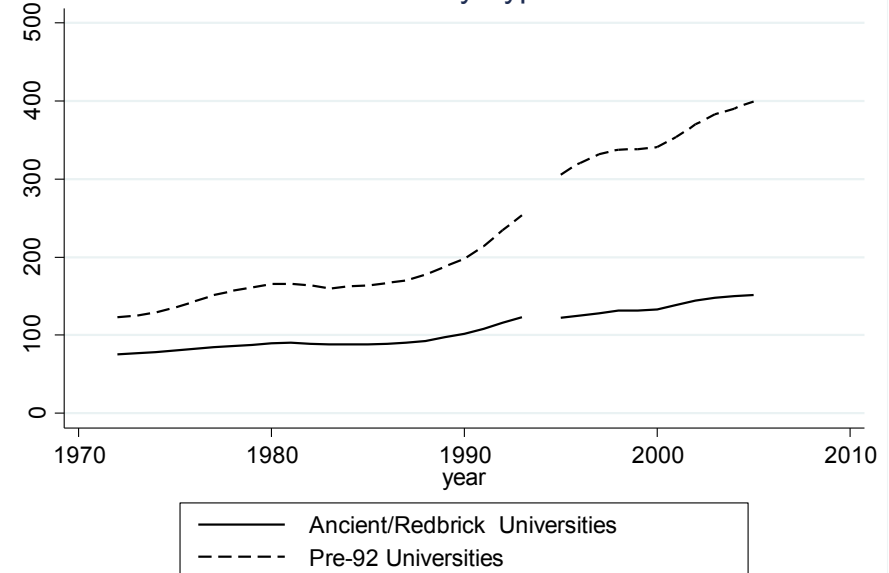
DEMAND FOR AND SUPPLY OF COLLEGE SLOTS AT SELECTIVE INSTITUTIONS AND PARENTAL TIME INVESTMENTS

- Mid 90's-2000's: Decrease in differentials for total childcare + Very high total childcare (7h/week in 2005, compared to 5h in the US) + Increases in gaps for teaching care: from 9 min/week in 1983 to 30 min/week in 2000.
- More stable student numbers but competition remains high for elite institutions: 28% in 1995, 2000, and 2005

Differential in Time Investments by Education



Total Enrolment by Type of Institution



CROSS COUNTRY EVIDENCE

COMPARISON ACROSS COUNTRIES: MOTHERS

	Australia	Finland	Germany	Italy	Netherlands	Norway	Spain	Sweden
Year dummies								
year_1971_1975	ref.				ref.			
year_1976_1980		ref.			0.12 (0.080)			
year_1981_1985					0.08 (0.060)	ref.		
year_1986_1990	2.68*** (0.275)	0.36** (0.041)		ref.	0.63*** (0.077)	0.65* (0.221)		
year_1991_1995	2.67*** (0.127)		ref.		0.82*** (0.092)		ref.	ref.
year_1996_2000	3.19*** (0.131)	1.84*** (0.037)			2.24*** (0.061)	0.13 (0.098)	-0.88 (0.403)	
year_2001_2005			1.39*** (0.017)	3.11*** (0.005)	2.12*** (0.049)		2.61** (0.454)	-0.22 (0.096)
College educated								
Some college or more	2.87*** (0.192)	1.15*** (0.042)	-0.07** (0.005)	1.70* (0.183)	0.54*** (0.054)	0.94*** (0.048)	0.74* (0.303)	1.41** (0.048)
Interaction terms								
Some college*1971_1975	ref.				ref.			
Some college*1976_1980		ref.			0.88*** (0.040)			
Some college*1981_1985					0.36*** (0.096)	ref.		
Some college*1986_1990	-1.24** (0.216)	-0.59*** (0.010)		ref.	0.85*** (0.039)	-1.86*** (0.061)		
Some college*1991_1995	-2.86*** (0.219)		ref.		2.16*** (0.036)		ref.	ref.
Some college*1996_2000	-2.82*** (0.096)	0.22 (0.081)			-0.48*** (0.085)	-0.48** (0.073)	3.51*** (0.443)	
Some college*2001_2005			-0.06 (0.067)	-0.67 (0.300)	0.31*** (0.070)		-0.04 (0.526)	-0.40** (0.015)

COMPARISON ACROSS COUNTRIES: FATHERS

	Australia	Finland	Germany	Italy	Netherlands	Norway	Spain	Sweden
A. Year dummies								
year_1971_1975	ref.				ref.			
year_1976_1980		ref.			0.09** (0.031)			
year_1981_1985					-0.13 (0.076)	ref.		
year_1986_1990	0.60*** (0.032)	0.39*** (0.039)		ref.	-0.11 (0.092)	0.17 (0.068)		
year_1991_1995	0.89*** (0.032)		ref.		0.39*** (0.083)		ref.	ref.
year_1996_2000	1.21*** (0.028)	0.96*** (0.038)			0.24* (0.105)	0.22 (0.084)	0.31** (0.077)	
year_2001_2005			0.60** (0.038)	1.45** (0.054)	1.00*** (0.060)		1.60*** (0.152)	-0.07 (0.021)
B. College educated								
Some college or more	-0.64** (0.196)	0.62*** (0.025)	0.36*** (0.000)	0.96** (0.069)	-0.56*** (0.058)	0.16*** (0.004)	0.91*** (0.044)	0.66** (0.016)
C. Interaction terms								
Some college*1971_1975	ref.				ref.			
Some college*1976_1980		ref.			2.68*** (0.037)			
Some college*1981_1985					1.15*** (0.066)	ref.		
Some college*1986_1990	2.08*** (0.178)	0.13 (0.069)		ref.	1.45*** (0.060)	0.16** (0.021)		
Some college*1991_1995	0.98*** (0.158)		ref.		1.12*** (0.074)		ref.	ref.
Some college*1996_2000	1.24*** (0.164)	-0.86*** (0.022)			3.14*** (0.127)	0.39*** (0.019)	0.77*** (0.044)	
Some college*2001_2005			0.24** (0.017)	-0.15 (0.137)	1.01*** (0.049)		0.76*** (0.079)	-0.32** (0.012)

CROSS-COUNTRY COMPARISON

- Increases in parental time investments in all countries.
 - At the beginning of the period: between one hour and one hour and 50 min per week,
 - Towards the early 2000's: mothers, about 3 hours and a half per week; fathers, about 2 hours and 20 min per week.
- Positive differentials throughout the period of analysis.
 - College educated 50 per cent more time non-college (one hour more per week)

CROSS-COUNTRY COMPARISON

- However, trends in the differential were not uniform across countries however.
 - In countries where college educated parents invested much more at the beginning of the period (mothers in Australia, Finland or Sweden), the difference decreased .
 - In countries where parental time investments by college-educated parents were not as big (fathers in Australia, Germany, or Norway and mothers and fathers in the Netherlands), the difference increased.
 - As a result, at the end of the period: fewer differences in the gap in time investments by education across all countries

COLLEGE WAGE GAPS AND EDUCATION GRADIENT (Fixed Effects Regression)

	(1) mothers	(2) fathers
college_gap	-8.88 (39.273)	22.56 (25.467)
Constant	6.88 (13.265)	-4.15 (8.602)
Observations	29	29

Notes: The table shows the correlation between the college wage premium and education gradients. Country fixed effects used. Standard errors in parentheses. * significant at 10%
** significant at 5%; *** significant at 1%.

CONCLUSION

- Parents with some college increased time investments compared to parents with no college
 - Particularly during a period coinciding with increased competition for university places (since the mid 80s to the mid 90s)
- At the end of the period- in a context of high competition for university places and substantial amount of time that parents spend with children- there are no differences in time with children by parental education. However:
 - Parents with some college spent relatively more time in educational activities with children- driven by parents of older children
 - Children of more educated parents spend more time in educational activities themselves (doing homework and studying)

CONCLUSION

- Like in the US, overall evidence supports college competition explanation for trends in time investments in children by educational background.
- Unlike the US, the types of activities performed both by parents and children, together with the relatively more meritocratic nature of student selection at higher education institutions => No evidence of wasteful rivalry
- However potential increase in inequality => Policy implication: Early childhood intervention programs (Cunha 2013)
- Unlike in the US and the UK, trends in differentials by education not uniform across countries

OLDER CHILDREN'S TIME USE

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- Children's diaries in the MTUS that interviewed all family members to match maternal education
 - UK: 1974, 1983, and 2000 surveys
 - US: 1985 and 2003-2008 surveys
- Samples selected to allow comparisons:
 - 14 to 17 years old in the UK
 - 15 to 17 in the US
- Variable:
 - **Homework** (av33): Study and homework.

CHILDREN'S HOMEWORK TIME. UK (1974-2005)

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constant	9.11 (4.719)	1.17 (4.628)

This Table shows the regression of weekly hours spent on homework and study (av33) on the variables of interest. The samples include all children 14-17. Controls are age and sex of the child and a vector of dummies to control for the day of the week the diary was reported (ref.: Sunday). The omitted year is labelled ref. in each column.

Standard errors in parentheses. * significant at 10% ** significant at 5%; *** significant at 1%.

Source: MTUS (1971-2008)

CHILDREN'S HOMEWORK TIME. US (1985-2008)

	Girls (1)	Boys (2)
A. Year dummies		
year_1985	ref.	ref.
year_2003	4.09** (0.216)	2.61** (0.071)
year_2004	6.33** (0.144)	7.41* (0.608)
year_2005	1.09** (0.041)	-1.14* (0.124)
year_2006	5.53** (0.165)	2.00* (0.224)
year_2007	4.23** (0.168)	6.98** (0.157)
year_2008	8.11** (0.422)	6.08** (0.153)
B. College educated		
Some college or more	4.31** (0.315)	2.61** (0.066)
C. Interaction terms		
Some college*year_1983	ref.	ref.
Some college*year_2003	-4.17* (0.632)	1.76* (0.197)
Some college*year_2004	-4.07* (0.420)	-3.20* (0.312)
Some college*year_2005	3.42** (0.182)	3.48** (0.132)
Some college*year_2006	-6.03* (0.608)	2.00** (0.125)
Some college*year_2007	-6.01** (0.162)	-1.76** (0.060)
Some college*year_2008	-6.35* (0.915)	-3.80** (0.168)
constant	5.46 (2.738)	8.46** (0.198)

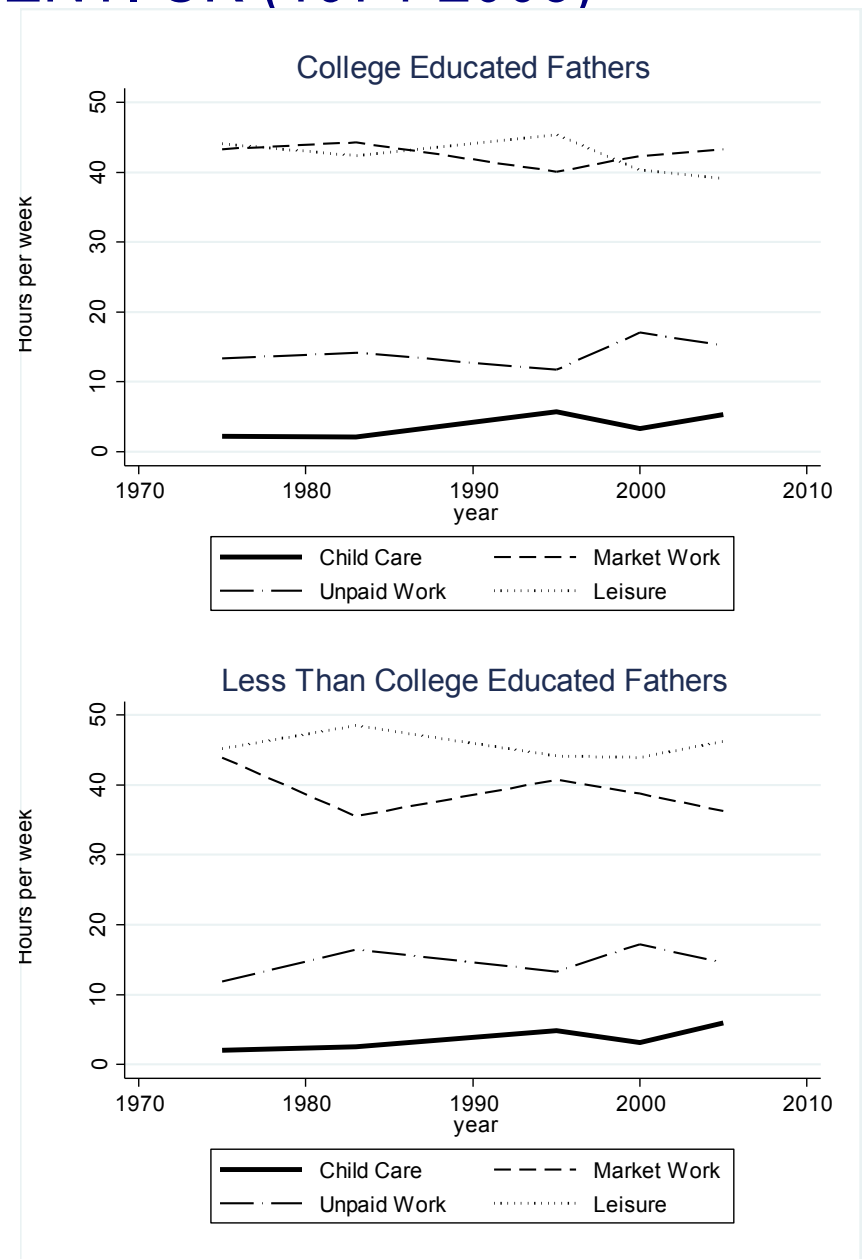
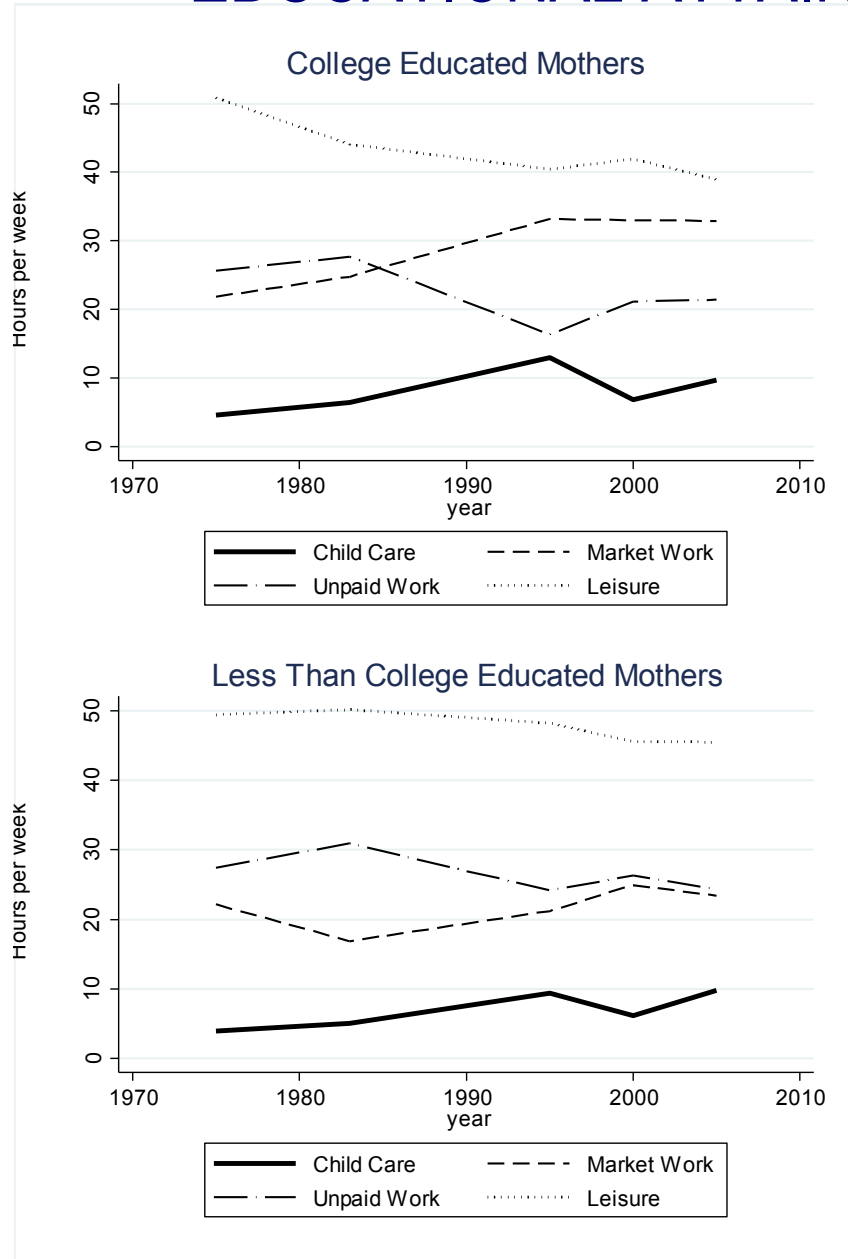
Notes: This Table shows the regression of weekly hours spent on homework and study (av33) on the variables of interest. The samples include all children 15-17. Controls are age and sex of the child and a vector of dummies to control for the day of the week the diary was reported (ref.: Sunday). The omitted year is labelled ref. in each column. Standard errors in parentheses. * significant at 10% ** significant at 5%; *** significant at 1%.
Source: MTUS (1985-2008)

CHILDREN'S HOMEWORK TIME

- For the UK:
 - In the 70s children devoted the same amount of time to homework regardless of their parents educational background
 - In 2000 children from more educated family backgrounds spent 1.5 times more time than children from less educated family backgrounds.
- For the United States: no increasing divergence in the time spent in homework by educational background.

TRENDS IN OVERALL TIME USE BY PARENTS

TRENDS IN DIFFERENT ACTIVITIES BY PARENTS BY EDUCATIONAL ATTAINMENT. UK (1974-2005)



OVERALL TIME USE BY PARENTS

- Both the secular increasing trend in childcare time and the increases in the differential time investments by education around the mid 1990's are financed by
 - changes in time devoted to unpaid work, complemented by decreases in leisure time from college educated mothers
 - changes in time devoted to unpaid work, complemented by decreases in market work from college educated fathers.

ALTERNATIVE EXPLANATIONS

ALTERNATIVE EXPLANATIONS

- Consider parents and non-parents => Find same pattern => rule out selection into parenthood
- Including income as an additional regressor => income is not significant and trends remain => rule out income effects
- Run the analysis separately for working and non-working mothers => Find also nonworking college educated mothers same pattern => rule out changing working practices
- Define highly educated as top 30 percent => Find same pattern => rule out changing composition of college educated

SAFETY CONCERNS

- Increases in safety fears may increase the level of parental supervision of children's activities, especially for the college educated (Valentine and McKendrick, 1997; Kurz 2002; Timperio et al. 2004; Kimbro et al. 2010)
- Data: International Crime Victims Survey: cross-time, cross-national comparable micro data on experience of common crime in different countries
 - UK: 1989, 1996, 2000, 2004 surveys
- Main sample: all women (men) 18-64 who are not students or retired

SAFETY CONCERNS

- Independent variables:
 - Break-in chances for the coming year: respondents' answer to how likely they thought that a burglary would take place in their house in the coming year (1=very unlikely, 3=very likely)
 - Feelings of unsafely, obtained by re-defining respondents' answer to the question 'How safe do you feel when walking alone on the street after dark' (1=very safe, 4=very unsafe)
- College educated: Indicator if years of study > 12 (years of compulsory education in UK)
 - The ICVS records the highest education level completed by the interviewee in years
 - This definition agrees with the definition of "some college or more" in MTUS

TRENDS IN SAFETY CONCERNS BY EDUCATION

	Female		Male	
	Burglary chances (1)	Feelings of unsafety (2)	Burglary chances (3)	Feelings of unsafety (4)
	Year dummies			
year_1989	ref.		ref.	
year_1992				
year_1996	0.12*** (0.006)	ref.	0.08*** (0.007)	ref.
year_2000	-0.03*** (0.005)	-0.13*** (0.009)	-0.01 (0.005)	-0.08*** (0.003)
year_2004_5	0.11*** (0.006)	0.08*** (0.005)	-0.02* (0.007)	0.10*** (0.004)
	College educated			
Some college or more	0.04*** (0.006)	-0.10*** (0.006)	0.02 (0.008)	-0.08*** (0.004)
	Interaction terms			
Some college*1989	ref.		ref.	
Some college*1992				
Some college*1996	-0.06*** (0.003)	ref.	-0.12*** (0.004)	ref.
Some college*2000	-0.05*** (0.002)	0.01 (0.005)	-0.09*** (0.001)	-0.13*** (0.006)
Some college*2004_5	-0.26*** (0.005)	-0.16*** (0.008)	-0.18*** (0.015)	-0.10** (0.012)
Constant	1.50*** (0.015)	2.48*** (0.021)	1.40*** (0.040)	1.88*** (0.043)

Notes:
International Crime Victims Survey Data, 1989-2005. This table shows the regression of the likelihood of their house being burgled in the coming year (1=very unlikely, 3=very likely) and the ordinal scale variable how safe do you feel walking alone in your area after dark (1=very safe, 4=very unsafe) on the variables of interest. The samples include all women (men) 18-64 who are not students or retired. Controls for individuals' ages (dummies for 18-24, 25-34, 35-44, 45-54, 55-64) are included. The omitted category is age 25-34. Standard errors in parentheses. * significant at 10% ** significant at 5%; *** significant at 1%.

SAFETY CONCERNS

- For mothers, safety concerns of college educated systematically lower than those of non-college mothers
- For fathers, sometimes lower, sometimes higher but no matching trends.

PARENTING STYLES

- Recently parents expected to devote substantial time inputs to produce a “good” childhood (Coltrane 2004; Sayer, Bianchi, and Robinson 2004). These demands felt to a larger extent by parents of higher educational status (Lareau 2003, Ermish 2008, Kalil et al. 2012).
- Data: European Values Study and World Values Survey: cross-time, cross-national comparable microdata on individuals values, beliefs, and opinions in different countries
 - EVS: 1981, 1990, and 1999 waves
 - WVS: 2005-2007 wave
- Main sample: all mothers (fathers) 18-64 who are not students or retired

PARENTING STYLES

- Independent variable: First principal component of different qualities that “children can be encouraged to learn at home”
 - independence; hard work; feeling of responsibility; tolerance and respect; thrift, saving money and things; determination, perseverance; religious faith; and obedience
 - the measure heavily weights the lack of emphasis on obedience and the stress on independence and perseverance
- College educated:
 - The EVS WVS uses 8 education levels and we compute our main independent variable as education level > 6 .
 - This definition agrees with the definition of some college or more as computed in MTUS

TRENDS IN INVOLVED PARENTING OVER TIME BY EDUCATION

	(1) Female	(2) Male
Year dummies		
year_1981	ref.	ref.
year_1990	0.40*** (0.008)	0.41*** (0.008)
year_1999	0.61*** (0.005)	0.85*** (0.012)
year_2005	0.72*** (0.020)	1.04*** (0.014)
College educated		
Some college or more	0.11*** (0.009)	0.60*** (0.005)
Interaction terms		
Some college*1981	ref.	ref.
Some college*1990	0.13*** (0.007)	-0.27*** (0.010)
Some college*1999	0.13*** (0.008)	-0.55*** (0.008)
Some college*2005	0.10*** (0.012)	-0.59*** (0.011)
Constant	-0.37*** (0.020)	-0.60*** (0.059)

Notes:

This table shows the regression of the composite measure of child-rearing values on the variables of interest for mothers (fathers). The measure is computed applying principal component analysis to the respondents' rankings on the qualities that children can be encouraged to learn at home from the following list: independence; hard work; feeling of responsibility; tolerance and respect; thrift, saving money and things; determination, perseverance; religious faith; and obedience. The samples include all mothers (fathers) 18-64 who are not students or retired. Controls for individuals' ages (dummies for 18-24, 25-34, 35-44, 45-54, 55-64) and marital status are included. The omitted category is age 25-34. Standard errors in parentheses. * significant at 10% ** significant at 5%; *** significant at 1%. Source: European Values Study (1981, 1990, and 1999) and World Values Survey Data, 2005. 57

PARENTING STYLES

- For mothers partially matching trends.
 - Increases in the gap from mid 80's to mid-90's
 - No clear decreases in the gap after mid-90's as in time investments
- For fathers no matching trends