

Supplementary appendix

SA1.1 Additional figures and tables

Table SA2: Tests of differences between labor market histories above and below the median wage

		Days in part-time over the last 5 years		Days in nonemployment over the last 5 years	
Year		1985	2010	1985	2010
Males	P-value of difference in means	0.0035	0	0	0
	P-value of difference in variances	0.0067	0	0	0
Females	P-value of difference in means	0	0	0	0
	P-value of difference in variances	0	0	0	0

Figure SA2: Share of occupation categories

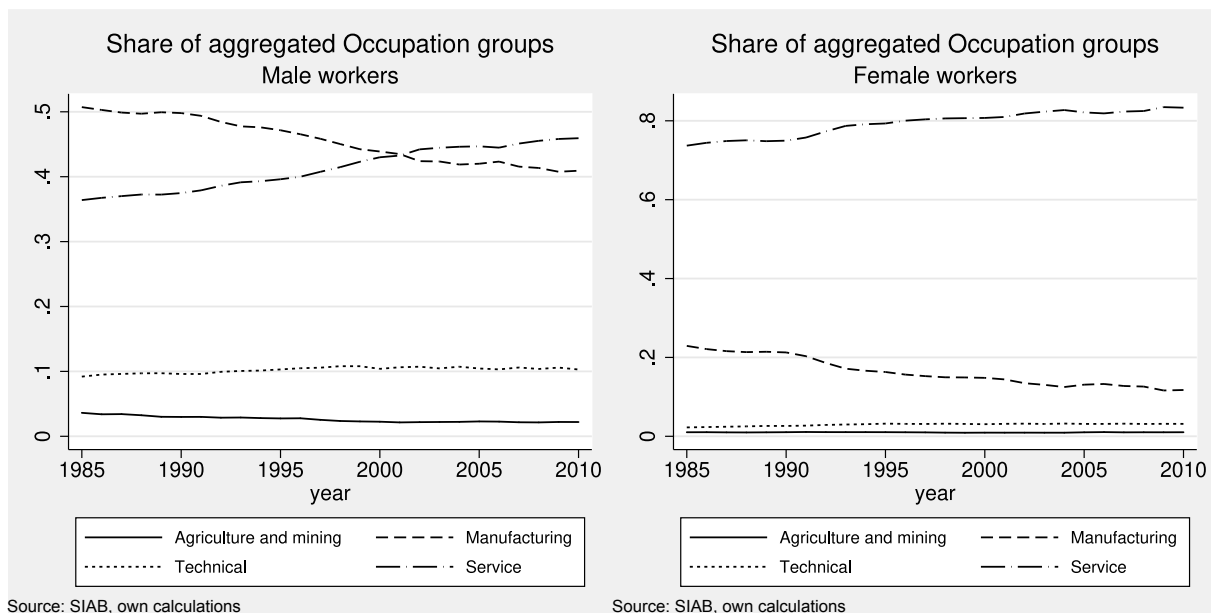


Table SA3: Descriptives of combined full-time and part-time samples

Males					Females				
	1985		2010			1985		2010	
	mean	sd	mean	sd		mean	sd	mean	sd
Real wage in Euro	69.89	47.51	81.61	48.15	Real wage in Euro	43.64	20.41	55.40	33.52
Log real wage	4.15	0.40	4.27	0.52	Log real wage	3.67	0.48	3.85	0.59
No/other degree indicator	0.19	0.40	0.08	0.28	No/other degree indicator	0.28	0.45	0.08	0.28
Vocational degree indicator	0.70	0.46	0.71	0.46	Vocational degree indicator	0.65	0.48	0.73	0.44
University degree indicator	0.07	0.25	0.16	0.36	University degree indicator	0.03	0.16	0.11	0.32
Work experience	27.32	11.19	29.08	10.23	Work experience	24.99	11.90	28.62	10.99
No. of days in full time last 5 years	1540.45	494.58	1494.81	544.03	No. of days in full time last 5 years	1199.98	696.74	1048.65	759.52
Fulltime spell in previous year?	0.96	0.20	0.94	0.24	Fulltime spell in previous year?	0.81	0.39	0.72	0.45
No. of days in part time last 5 years	6.29	78.41	37.03	203.05	No. of days in part time last 5 years	209.50	513.80	366.32	642.41
Part-time spell in previous year?	0.01	0.08	0.03	0.18	Part-time spell in previous year?	0.14	0.35	0.25	0.43
Agriculture and mining	0.03	0.17	0.02	0.13	Agriculture and mining	0.01	0.08	0.01	0.08
Plastics, rubber, mineral products	0.03	0.17	0.03	0.17	Plastics, rubber, mineral products	0.02	0.14	0.01	0.10
Chemicals	0.03	0.18	0.02	0.15	Chemicals	0.02	0.14	0.01	0.12
Machinery and metal products	0.15	0.36	0.13	0.33	Machinery and metal products	0.05	0.22	0.03	0.18
Transport- and electrical equipment	0.12	0.32	0.10	0.31	Transport- and electrical equipment	0.07	0.26	0.04	0.20
Food and basic consumption	0.10	0.31	0.07	0.25	Food and basic consumption	0.12	0.33	0.06	0.23
Hotels and restaurants	0.01	0.11	0.02	0.14	Hotels and restaurants	0.03	0.18	0.03	0.18
Construction	0.12	0.32	0.08	0.27	Construction	0.02	0.14	0.02	0.13
Trade	0.12	0.33	0.14	0.35	Trade	0.19	0.39	0.16	0.37
Transport and communication	0.06	0.24	0.07	0.26	Transport and communication	0.03	0.17	0.04	0.19
Financial and insurance	0.08	0.27	0.18	0.38	Financial and insurance	0.12	0.33	0.19	0.40
Public services	0.04	0.20	0.05	0.21	Public services	0.06	0.23	0.06	0.24
Health and Education	0.04	0.18	0.06	0.23	Health and Education	0.18	0.38	0.26	0.44
Public administration	0.06	0.24	0.04	0.20	Public administration	0.08	0.28	0.07	0.26

Figure SA3: Inequality development base year 1985, specification EEHOI of total employment

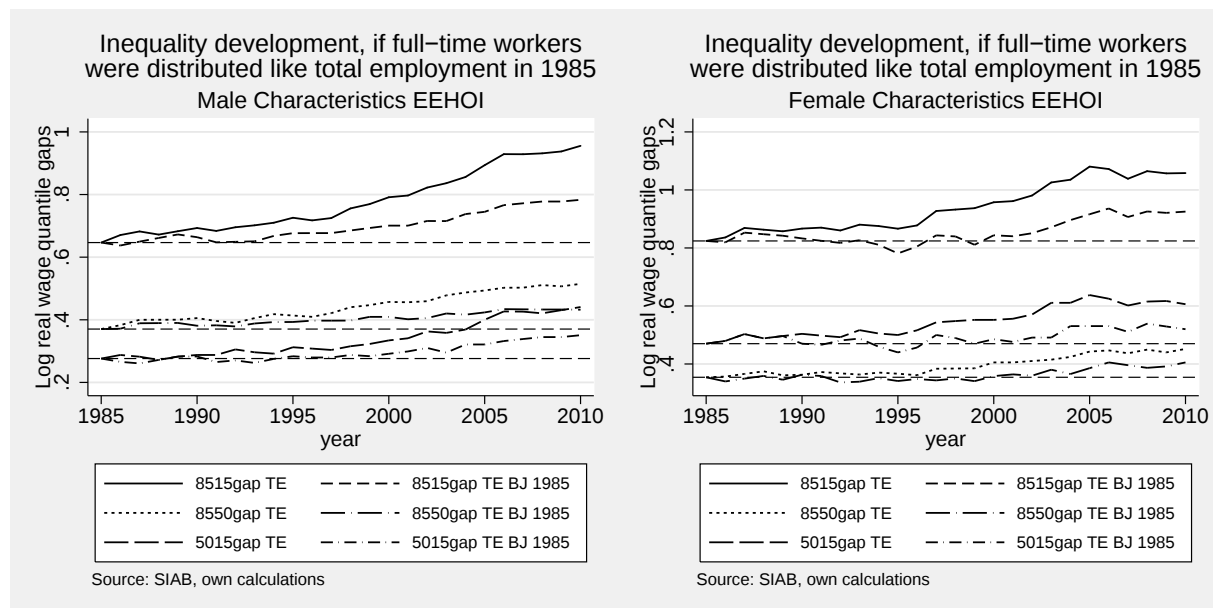


Figure SA4: Inequality development base year 2010, specification EEHOI of total employment

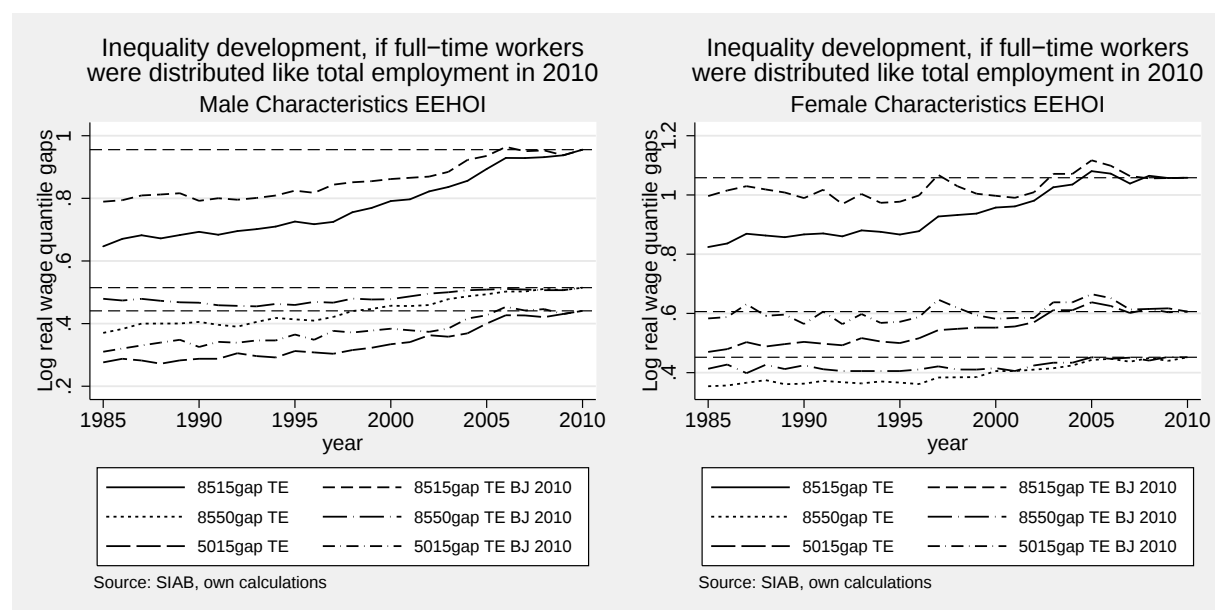


Table SA4: Change in inequality measures since 1985, for males, composition adjusted to total employment in base year 2010

Observed Increase	Ed			Ed+Ex			Ed+Ex+Hist			Ed+Ex+Hist+Occ+Ind		
	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment
85/15	0.309	0.222	36.71%	0.215	39.24%	2.53%	0.159	58.32%	19.08%	0.166	55.96%	-2.36%
85/50	0.144	0.069	60.46%	0.051	71.68%	11.22%	0.045	75.67%	3.99%	0.036	81.00%	5.33%
50/15	0.164	0.153	10.64%	0.164	0.71%	-9.93%	0.114	41.36%	40.65%	0.131	29.29%	-12.07%
90/10	0.195	0.160	-4.04%	0.149	4.87%	8.91%	0.056	68.78%	63.91%	0.058	67.67%	-1.11%
residual												

Table SA5: Change in inequality measures since 1985, for females, composition adjusted to total employment in base year 2010

Observed Increase	Ed			Ed+Ex			Ed+Ex+Hist			Ed+Ex+Hist+Occ+Ind		
	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment
85/15	0.234	0.173	31.10%	0.087	68.30%	37.20%	0.035	88.04%	19.74%	0.062	78.15%	-9.89%
85/50	0.098	0.047	58.46%	0.047	58.46%	0.00%	0.031	73.55%	15.09%	0.039	66.00%	-7.55%
50/15	0.136	0.127	8.88%	0.041	75.07%	66.19%	0.004	97.73%	22.66%	0.023	86.39%	-11.34%
90/10	0.158	0.156	-15.97%	0.077	47.55%	63.52%	0.036	76.60%	29.05%	0.018	88.34%	11.74%
residual												

SA1.2 Choice of base year and interaction effects

As a robustness check and to account for interaction effects in the counterfactual analysis, we reverse the role of the base year and the target year in our reweighting procedure. So far, we have considered the wage distribution in 2010 and changed the distribution of characteristics back to that of the base year 1985. This is indicative of the part of the inequality increase that could be ‘reversed’ by undoing the change in characteristics. In this case, the inequality change explained by composition effects is $QG(t_w = 2010, t_x = 2010) - QG(t_w = 2010, t_x = 1985)$. Now, we focus on the opposite case in which we start with the wage distribution in 1985 but only change the distribution of characteristics to the level of 2010. This corresponds to the change $QG(t_w = 1985, t_x = 2010) - QG(t_w = 1985, t_x = 1985)$, i.e. the part of the inequality increase that can be accounted for by solely changing the distribution of characteristics while holding fixed the conditional wage structure of 1985.

Figures SA5 to SA8 and tables SA6, SA7 report the findings. For males, the contribution of the different sets of covariates to the overall inequality increase remain qualitatively similar, with a few notable exceptions. The general result is that compositional changes in educational qualifications and in labor market histories provide substantial contributions, while compositional changes related to potential work experience and the occupations/industry structure do so only to a much smaller extent (table SA6 vs. table 4). However, the impact of education changes is much stronger in table SA6 compared to table 4 (31.9%, 59.4%, 7.4%, 18.6% vs. 17.1%, 37.5%, -1.0%, 7.1%). This means that compositional changes over time are associated with a stronger rise in wage inequality based on the wage distribution in 1985 compared to 2010.¹⁷ Put differently, the effects of a widening conditional wage structure $f(w|x)$ is stronger when applied to the distribution of characteristics in 1985 than when applied to that in 2010. This would naturally arise if the 1985 distribution of characteristics is more heterogeneous so that applying diverging wage returns to this more heterogeneous population leads to stronger inequality increases. Take education, the share of low-skilled declines from a high initial level, while the share of high-skilled increases (figure 7). Another difference between tables 4 and

¹⁷This conclusion is based on the following formal argument ($10 \equiv 2010, 85 \equiv 1985$):

$$QG(t_w = 85, t_x = 10) - QG(t_w = 85, t_x = 85) > QG(t_w = 10, t_x = 10) - QG(t_w = 10, t_x = 85)$$

is equivalent to

$$QG(t_w = 10, t_x = 10) - QG(t_w = 85, t_x = 10) < QG(t_w = 10, t_x = 85) - QG(t_w = 85, t_x = 85).$$

SA6 is that the contribution of occupations/industries falls when the base year 2010 is used (table SA6). In contrast to the results for education, the composition of occupation and industry has changed in a way that wage inequality increases more strongly for the 2010 composition of occupation and industry compared to the 1985 composition.

For females, the contribution of composition changes in work experience and recent labor market histories remains qualitatively unchanged when we change the base year (columns 6 to 10 in tables 5 and SA7). As for males, the compositional effects of educational upgrading becomes much stronger in table SA7. The only other effect for females, that is not fully robust to the choice of the base year, concerns the changes in occupations and industries. Here, table SA7 shows pronounced effects on inequality in the upper and lower part of the distribution, which are not present in table 5. The overall contribution of compositional effects to rising female wage inequality in table SA7 is even larger than for the base year 1985 (table 5). In particular, composition changes can account for 78.4% (103.2%) of the rise in female overall (lower tail) wage inequality between 1985 and 2010. We conclude that the composition changes would have been associated with a large increase in inequality based on 1985 wages compared to 2010 wages. This is in contrast to the widely held view in the past that Germany used to be a country where institutions strongly limited wage inequality (see Fitzenberger 1999 or Dustmann et al. 2014 for a critical assessment of this view).

Figure SA5: Inequality development base year 2010, specification E

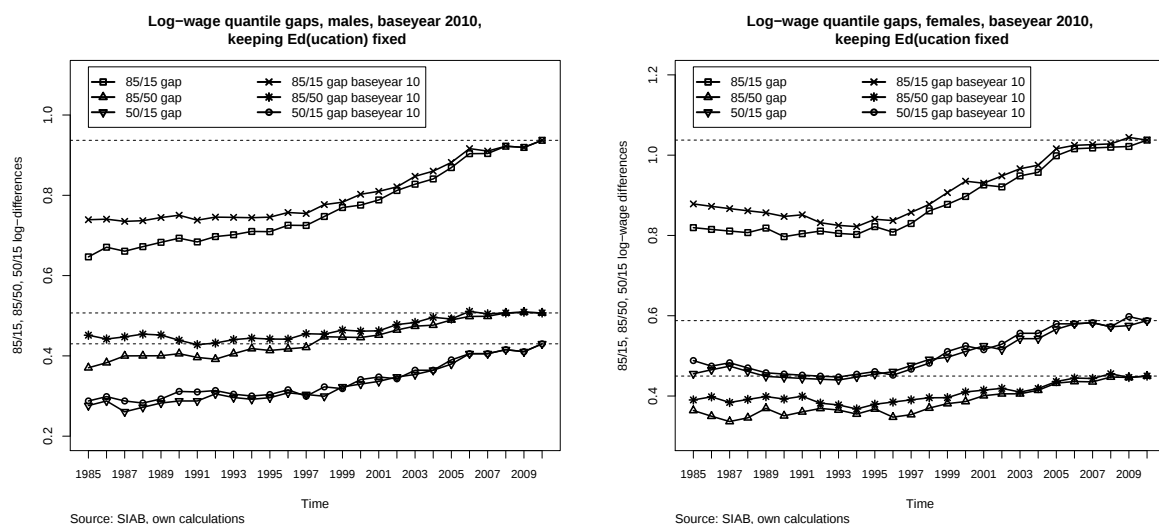


Figure SA6: Inequality development base year 2010, specification EE

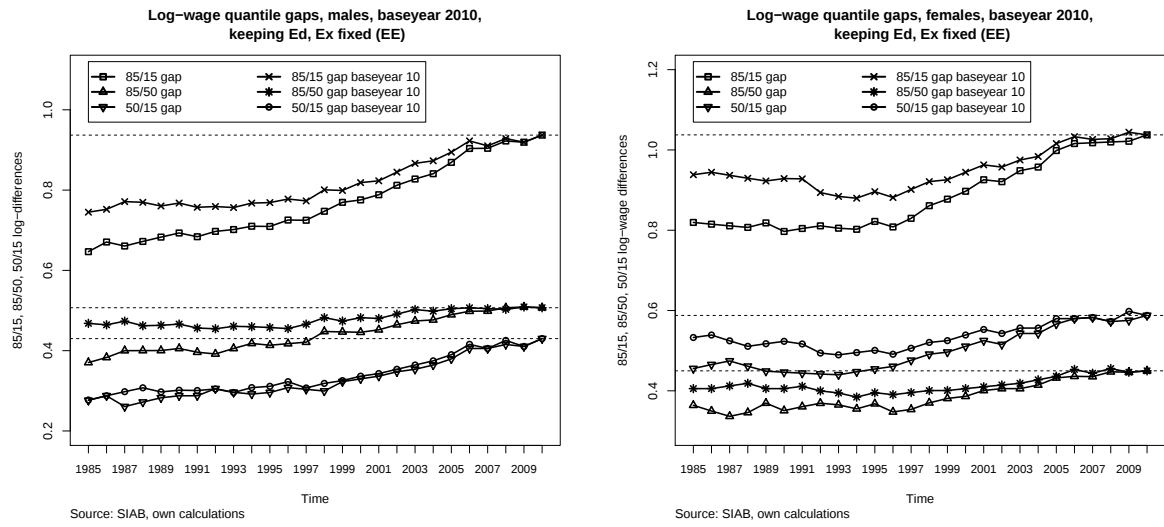


Figure SA7: Inequality development base year 2010, specification EEH

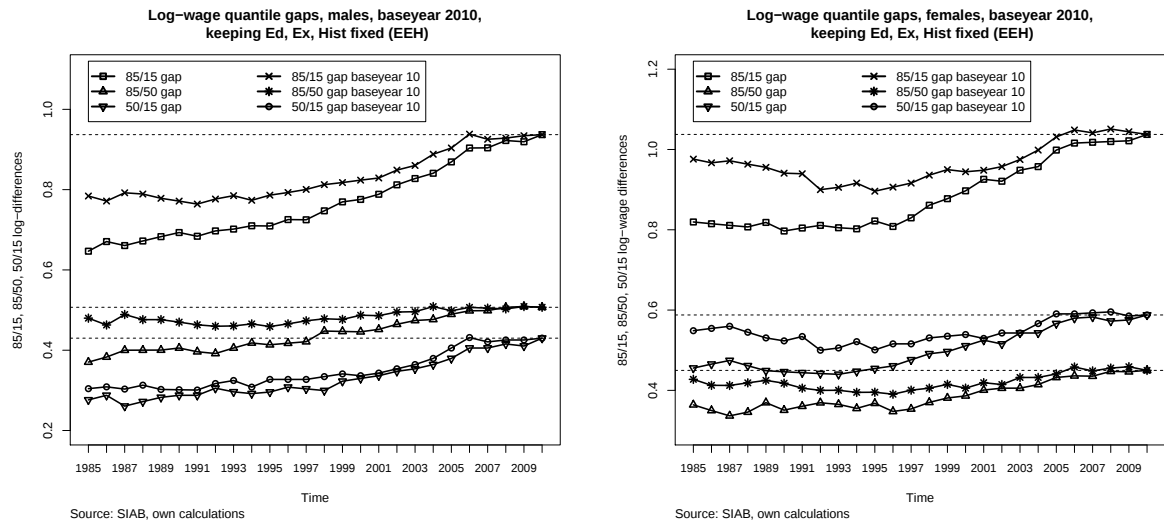


Figure SA8: Inequality development base year 2010, specification EEHOI

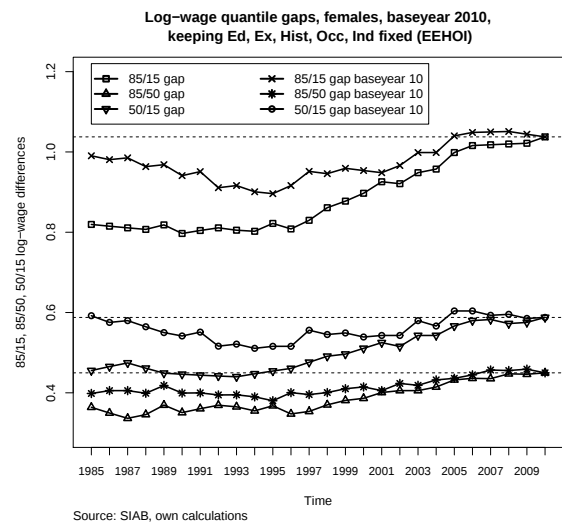
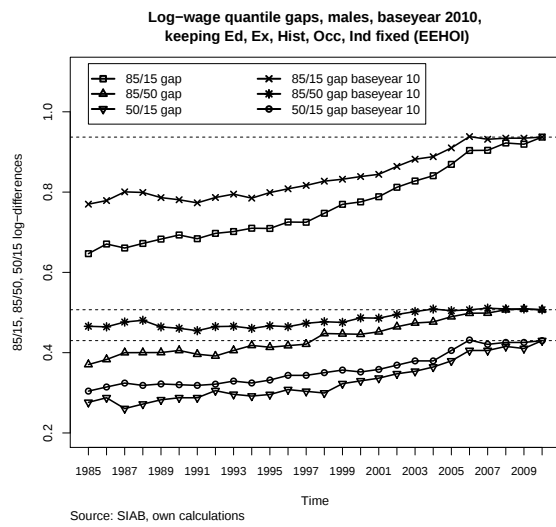


Table SA6: Reweighted inequality increase 1985-2010, males, compositions for base year 2010

Observed Increase	Ed			Ed+Ex			Ed+Ex+Hist			Ed+Ex+Hist+Occ+Ind		
	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment
85/15	0.290	0.198	31.87%	0.192	33.87%	2.00%	0.153	47.34%	13.47%	0.167	42.46%	-4.88%
85/50	0.137	0.055	59.40%	0.039	71.47%	12.07%	0.027	80.17%	8.70%	0.041	69.80%	-10.37%
50/15	0.154	0.142	7.43%	0.153	0.48%	-6.95%	0.126	18.18%	17.70%	0.126	18.18%	0.00%
90/10	0.183	0.149	18.64%	0.138	24.62%	5.98%	0.107	41.36%	16.74%	0.094	48.73%	7.37%
residual												

Table SA7: Reweighted inequality increase 1985-2010, females, compositions for base year 2010

Observed Increase	Ed			Ed+Ex			Ed+Ex+Hist			Ed+Ex+Hist+Occ+Ind		
	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment	Remaining increase	Explained share	Increment
85/15	0.218	0.159	27.10%	0.099	54.49%	27.39%	0.062	71.79%	17.30%	0.047	78.39%	6.60%
85/50	0.086	0.060	30.58%	0.044	48.38%	17.80%	0.022	74.01%	25.63%	0.051	40.09%	-33.92%
50/15	0.132	0.099	24.85%	0.055	58.44%	33.59%	0.039	70.36%	11.92%	-0.004	103.22%	32.86%
90/10	0.185	0.180	2.55%	0.093	49.56%	47.01%	0.061	66.94%	17.38%	0.046	75.11%	8.17%
residual												