

Online Appendix for Chowdry, Crawford & Goodman (2010)

Table A1 Influences on GCSE attainment: family background and schools

	Age 16 attainment (percentiles)	Value-added between age 11 and age 16 (percentiles)
<i>Demographic & family background characteristics</i>		
2 nd SEP quintile	2.713** [0.710]	1.932** [0.613]
Middle SEP quintile	4.864** [0.741]	3.310** [0.667]
4 th SEP quintile	5.917** [0.766]	3.979** [0.708]
Top SEP quintile	7.146** [0.864]	4.367** [0.810]
Mother highest qualification: NVQ level 1	0.089 [0.912]	-0.250 [0.788]
Mother highest qualification: NVQ level 2	1.721* [0.686]	0.527 [0.585]
Mother highest qualification: NVQ level 3	3.481** [0.841]	1.361 [0.731]
Mother highest qualification: NVQ level 4/5	3.730** [0.793]	2.034** [0.706]
Mother highest qualification: other	0.313 [1.616]	0.733 [1.497]
Father highest qualification: NVQ level 1	1.571 [0.936]	0.825 [0.830]
Father highest qualification: NVQ level 2	1.091 [0.675]	0.342 [0.607]
Father highest qualification: NVQ level 3	1.452 [0.756]	0.282 [0.692]
Father highest qualification: NVQ level 4/5	2.359** [0.783]	0.759 [0.695]
Father highest qualification: other	-0.383 [1.667]	0.133 [1.520]
Lone parent household	-2.062* [0.847]	-2.238** [0.739]
Mother aged 20-24 at birth	2.763** [0.998]	1.706 [0.897]
Mother aged 25-29 at birth	5.335** [0.997]	3.647** [0.900]
Mother aged 30-34 at birth	7.138** [1.043]	4.849** [0.939]
Mother aged 35+ at birth	7.957** [1.174]	5.434** [1.060]
Mother works part-time	2.048** [0.483]	1.450** [0.427]
Mother self-employed	1.553 [0.972]	1.273 [0.891]
Mother unemployed	-1.511 [1.905]	-1.746 [1.763]
Mother in full-time education/training	-1.002 [2.124]	0.474 [1.822]
Mother sick/disabled	0.511 [1.671]	-0.373 [1.573]
Mother looking after home/family	1.290* [0.646]	0.797 [0.596]

Table A1 continued

	Age 16 attainment (percentiles)	Value-added between age 11 and age 16 (percentiles)
Mother retired	-7.664 [5.341]	-5.841 [5.465]
Father works part-time	-0.896 [1.568]	-0.979 [1.332]
Father self-employed	-0.348 [0.715]	-0.684 [0.654]
Father unemployed	0.952 [1.307]	0.624 [1.158]
Father in full-time education/training	3.904 [4.021]	4.381 [3.060]
Father sick/disabled	-1.139 [1.472]	-0.776 [1.335]
Father looking after home/family	-2.054 [1.899]	-1.510 [1.633]
Father retired	3.048 [2.003]	2.113 [1.549]
Mother's health fairly good	-1.684** [0.461]	-1.381** [0.395]
Mother's health not very good	-2.169** [0.699]	-1.475* [0.627]
Mother's health not good at all	-3.585** [1.217]	-3.129* [1.223]
Father's health fairly good	0.027 [0.520]	-0.242 [0.463]
Father's health not very good	0.256 [0.964]	0.458 [0.812]
Father's health not good at all	-0.405 [1.492]	-0.419 [1.428]
1 older sibling	-0.662 [0.462]	-0.315 [0.421]
2 older siblings	-1.729* [0.707]	-1.376* [0.630]
3+ older siblings	-3.875** [1.236]	-2.859** [1.097]
1 younger sibling	1.169* [0.474]	0.996* [0.433]
2 younger siblings	0.492 [0.665]	0.228 [0.599]
3+ younger siblings	0.159 [0.942]	0.376 [0.866]
Female	4.356** [0.453]	4.109** [0.412]
Mixed race	-1.753 [1.473]	-0.828 [1.384]
Indian	2.124 [1.439]	3.935** [1.210]
Pakistani	-2.088 [1.576]	0.870 [1.322]
Bangladeshi	2.254 [2.018]	2.750 [1.695]
Caribbean	-6.867** [1.231]	-1.234 [1.140]
African	-4.910** [1.704]	-0.211 [1.549]

Table A1 continued

	Age 16 attainment (percentiles)	Value-added between age 11 and age 16 (percentiles)
Chinese	14.515** [3.568]	10.620** [3.110]
Any other ethnicity	4.489** [1.637]	5.397** [1.535]
English as an additional language	3.056* [1.273]	4.513** [1.068]
Low birth weight	0.093 [1.500]	1.684 [1.370]
High birth weight	0.784 [1.358]	0.766 [1.226]
October-born	-0.805 [0.924]	-0.501 [0.840]
November-born	-0.490 [0.918]	-0.268 [0.857]
December-born	0.716 [0.858]	1.491 [0.793]
January-born	-0.992 [0.879]	0.286 [0.809]
February-born	-0.965 [0.966]	0.556 [0.887]
March-born	-0.411 [0.941]	0.804 [0.863]
April-born	-0.997 [0.900]	1.353 [0.860]
May-born	-1.691 [0.866]	0.554 [0.800]
June-born	-0.954 [0.896]	1.172 [0.816]
July-born	-1.086 [0.860]	1.635* [0.792]
August-born	-1.566 [0.879]	1.349 [0.786]
<i>Secondary school characteristics</i>		
School average Key Stage 2 score	9.275** [2.468]	-0.442 [2.373]
Key Stage 2 to Key Stage 4 value added measure	0.126** [0.018]	0.146** [0.017]
Community technology college	17.602** [3.615]	17.064** [3.305]
Foundation school	0.882 [0.978]	0.839 [0.962]
Voluntary aided school	-0.105 [1.434]	0.310 [1.354]
Voluntary controlled school	0.984 [1.633]	0.669 [1.456]
Special school	-9.789 [5.825]	-20.328** [6.108]
School has a sixth form	1.088 [0.836]	1.234 [0.811]
Grammar school	5.890** [2.179]	3.106 [2.108]

Table A1 continued

	Age 16 attainment (percentiles)	Value-added between age 11 and age 16 (percentiles)
Single sex school	-1.365 [1.273]	-0.728 [1.153]
School size	0.001 [0.002]	0.000 [0.001]
% pupils eligible for free school meals	20.146** [4.998]	14.996** [4.735]
% pupils with English as an additional language	-13.174** [5.020]	-12.555** [4.665]
% white pupils	1.014 [3.944]	2.172 [3.668]
Most friends will stay on post 16	4.387** [0.553]	3.092** [0.498]
Most friends will do something else	-0.374 [1.241]	-0.615 [1.160]
Attainment at age 11		
2 nd quintile of Key Stage 2 attainment		10.574** [0.616]
Middle quintile of Key Stage 2 attainment		17.712** [0.714]
4 th quintile of Key Stage 2 attainment		25.380** [0.762]
Top quintile of Key Stage 2 attainment		35.052** [0.821]

Notes: table contains selected coefficients from two simple OLS regression models of the determinants of Key Stage 4 (age 16) percentile score. Both models also include controls for parental attitudes and material resources, and young person's attitudes and behaviours. Coefficient estimates for parental attitudes and material resources can be found in Table 2. Coefficient estimates for young person's attitudes and behaviours can be found in Table 3. Missing dummies are included, where appropriate, but their coefficient estimates are not shown. Standard errors are robust, corrected for clustering at the school level and shown in parentheses. ** indicates significance at the 1% level; * indicates significance at the 5% level.

Table A2 Differences in family background and school characteristics by SEP quintile

	Poorest quintile (Q1)	2 nd quintile (Q2)	Middle quintile (Q3)	4 th quintile (Q4)	Richest quintile (Q5)	Q5-Q1
<i>Family background variables</i>						
Mother No qualifications	45.7%	24.7%	15.3%	8.4%	2.9%	-42.9ppts**
Mother NVQ level 1	11.5%	12.2%	9.9%	7.0%	2.9%	-8.6ppts**
Mother NVQ level 2	26.3%	37.3%	40.5%	36.5%	27.8%	1.4ppts
Mother NVQ level 3	9.0%	12.7%	14.9%	17.5%	15.6%	6.6ppts**
Mother NVQ level 4/5	5.2%	10.6%	17.5%	29.1%	50.1%	44.9ppts**
Father No qualifications	44.7%	25.9%	17.7%	10.6%	3.7%	-41.0ppts**
Father NVQ level 1	9.3%	9.0%	6.8%	5.1%	2.1%	-7.3ppts**
Father NVQ level 2	27.4%	38.0%	36.4%	33.1%	20.9%	-6.4ppts**
Father NVQ level 3	9.8%	14.4%	18.5%	21.0%	21.5%	11.7ppts**
Father NVQ level 4/5	6.0%	10.4%	18.7%	29.0%	51.4%	45.4ppts**
Lone parent household	49.8%	31.7%	20.8%	15.3%	10.9%	-38.8ppts**
Mother aged under 20 at birth	13.6%	8.5%	4.5%	3.9%	1.5%	-12.1ppts**
Mother aged 20-24 at birth	34.1%	30.2%	24.5%	18.3%	12.8%	-21.3ppts**
Mother aged 25-29 at birth	29.9%	34.0%	38.6%	39.1%	38.8%	8.9ppts**
Mother aged 30-34 at birth	14.7%	19.5%	23.6%	28.1%	34.5%	19.8ppts**
Mother aged 35+ at birth	7.7%	7.7%	8.7%	10.6%	12.4%	4.7ppts**
Mother works full-time	9.0%	25.5%	36.1%	42.3%	48.3%	39.3ppts**
Mother works part-time	23.8%	41.0%	40.3%	39.8%	37.0%	13.3ppts**
Mother self-employed	0.9%	3.8%	6.1%	5.6%	4.7%	3.8ppts**
Mother unemployed	4.0%	0.8%	0.5%	0.3%	0.4%	-3.6ppts**
Mother FT education/training	2.2%	0.9%	0.8%	0.8%	0.6%	-1.6ppts**
Mother sick/disabled	6.2%	2.6%	1.6%	0.9%	0.2%	-6.0ppts**
Mother looking after home/family	53.8%	25.3%	14.6%	10.3%	8.7%	-45.1ppts**
Mother retired	0.1%	0.0%	0.2%	0.0%	0.1%	-0.1ppts
Father works full-time	41.6%	71.0%	75.6%	80.0%	86.2%	44.6ppts**
Father works part-time	7.5%	3.2%	1.6%	1.5%	1.0%	-6.5ppts**
Father self-employed	4.7%	14.4%	18.8%	16.0%	10.5%	5.7ppts**
Father unemployed	16.2%	2.7%	0.8%	0.3%	0.4%	-15.8ppts**
Father FT education/training	0.8%	0.1%	0.3%	0.1%	0.1%	-0.7ppts*
Father sick/disabled	18.9%	5.3%	1.4%	0.7%	0.6%	-18.3ppts**
Father looking after home/family	8.0%	2.5%	0.6%	0.4%	0.2%	-7.9ppts**
Father retired	2.3%	0.7%	0.9%	1.0%	1.1%	-1.2ppts
Mother's health very good	33.9%	48.2%	54.4%	61.1%	66.3%	32.4ppts**
Mother's health fairly good	39.9%	38.2%	35.8%	32.2%	28.4%	-11.5ppts**
Mother's health not very good	19.5%	10.3%	7.2%	5.8%	4.1%	-15.4ppts**
Mother's health not good at all	6.7%	3.3%	2.6%	1.0%	1.2%	-5.5ppts**
Father's health very good	34.0%	50.0%	57.0%	60.7%	64.4%	30.4ppts**
Father's health fairly good	37.3%	37.1%	35.2%	34.6%	31.8%	-5.5ppts**
Father's health not very good	18.6%	9.2%	6.5%	3.8%	3.0%	-15.5ppts**
Father's health not good at all	10.1%	3.8%	1.3%	0.9%	0.8%	-9.3ppts**
1 older sibling	35.1%	34.7%	37.1%	38.5%	38.9%	3.8ppts**
2 older siblings	12.4%	11.5%	8.9%	8.8%	8.4%	-4.0ppts**
3+ older siblings	4.3%	2.8%	1.8%	1.0%	0.8%	-3.6ppts**
1 younger sibling	32.9%	34.9%	37.0%	37.9%	38.1%	5.2ppts**
2 younger siblings	17.8%	15.7%	13.7%	10.7%	10.8%	-7.0ppts**
3+ younger siblings	12.0%	6.2%	4.3%	2.6%	1.7%	-10.3ppts**

Table A2 continued

	Poorest quintile (Q1)	2 nd quintile (Q2)	Middle quintile (Q3)	4 th quintile (Q4)	Richest quintile (Q5)	Q5-Q1
Individual demographic variables						
Female	49.4%	49.5%	47.5%	50.8%	50.2%	0.8ppts
White	77.9%	85.9%	89.9%	92.6%	94.3%	16.4ppts**
Mixed race	2.7%	1.8%	1.3%	1.1%	1.0%	-1.7ppts**
Indian	2.5%	3.6%	3.1%	2.3%	1.6%	-0.9ppts**
Pakistani	5.1%	3.5%	1.6%	0.7%	0.6%	-4.5ppts**
Bangladeshi	3.4%	0.9%	0.3%	0.1%	0.1%	-3.3ppts**
Caribbean	2.7%	1.9%	1.4%	1.2%	0.6%	-2.1ppts**
African	3.0%	1.0%	0.7%	0.7%	0.6%	-2.4ppts**
Chinese	0.4%	0.2%	0.4%	0.3%	0.3%	-0.1ppts
Any other ethnicity	2.5%	1.2%	1.2%	0.9%	1.0%	-1.4ppts**
English as an Additional Language	17.1%	10.1%	6.7%	4.0%	2.8%	-14.3ppts**
Birthweight<2.5kg	9.9%	9.6%	8.3%	5.8%	5.1%	-4.8ppts**
Birthweight>2.5kg & <4.5kg	88.7%	88.2%	89.4%	91.5%	92.7%	4.1ppts**
Birthweight>4.5kg	1.5%	2.2%	2.3%	2.7%	2.2%	0.7ppts
January-born	8.8%	8.2%	8.3%	7.2%	7.6%	-1.2ppts
February-born	7.7%	8.5%	7.4%	8.1%	8.6%	0.8ppts
March-born	7.3%	7.7%	8.9%	8.6%	8.5%	1.2ppts
April-born	9.3%	8.4%	8.2%	8.6%	7.7%	-1.6ppts
May-born	9.3%	9.1%	9.0%	8.9%	9.0%	-0.3ppts
June-born	8.1%	8.7%	8.2%	8.2%	9.0%	0.9ppts
July-born	8.6%	8.6%	8.8%	8.3%	10.4%	1.8ppts*
August-born	9.2%	8.3%	9.1%	8.7%	8.7%	-0.5ppts
September-born	7.4%	7.8%	9.4%	9.3%	7.5%	0.1ppts
October-born	8.6%	7.7%	7.7%	8.0%	8.3%	-0.2ppts
November-born	7.7%	8.7%	7.3%	7.9%	7.5%	-0.2ppts
December-born	8.0%	8.5%	7.6%	8.3%	7.3%	-0.7ppts
School characteristics						
Average KS2 level among year group	4.308	4.389	4.465	4.515	4.595	0.287**
School KS2-KS4 value-added	979.32	982.13	986.56	989.97	994.80	15.475**
School type: City Technology College	0.5%	0.6%	0.8%	0.8%	1.0%	0.6ppts
School type: Community	74.8%	71.4%	66.1%	63.3%	60.4%	-14.4ppts**
School type: Foundation	11.9%	15.4%	17.3%	20.0%	19.7%	7.8ppts**
School type: Voluntary Aided	10.5%	10.2%	12.4%	12.0%	14.7%	4.2ppts*
School type: Voluntary Controlled	1.4%	2.1%	3.2%	3.6%	4.2%	2.7ppts*
School type: Special	0.9%	0.2%	0.2%	0.3%	0.0%	-0.9ppts*
School has a sixth form	50.2%	53.6%	59.3%	64.3%	68.5%	18.4ppts**
School type: Grammar	1.0%	2.0%	3.0%	5.2%	8.2%	7.2ppts**
Single-sex school	9.7%	8.2%	8.3%	10.1%	11.3%	1.6ppts
School's total number of pupils	1,078.1	1,103.0	1,137.5	1,165.3	1,186.5	108.455**
School % White British pupils	75.7%	83.1%	86.1%	87.0%	87.0%	11.3ppts**
School % FSM pupils	22.5%	16.6%	12.8%	10.8%	8.6%	-13.8ppts**
School % EAL pupils	15.4%	9.7%	6.9%	6.1%	5.8%	-9.6ppts**

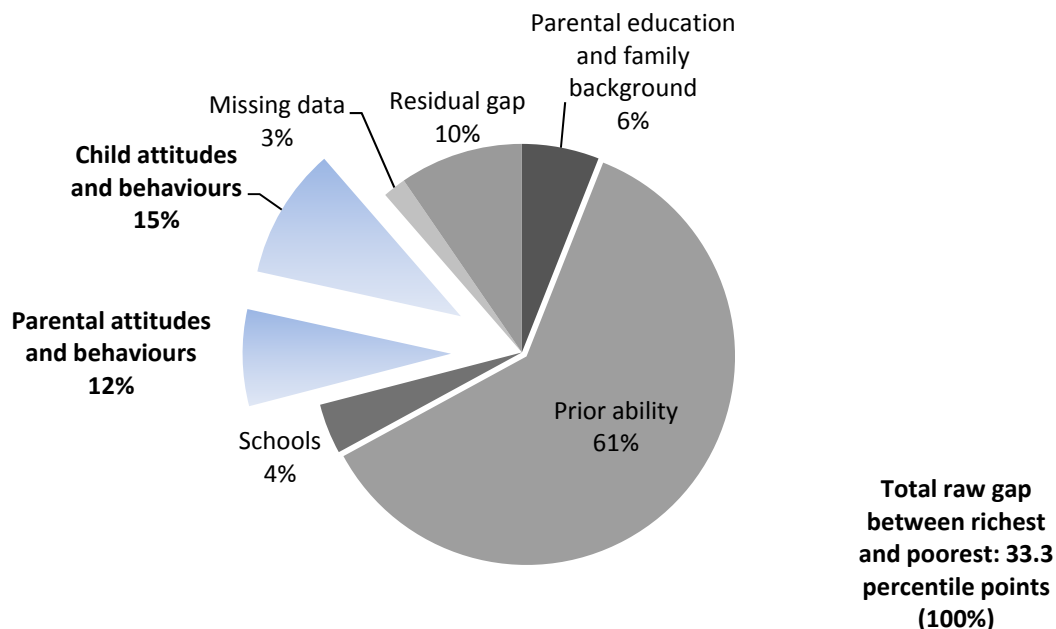
Notes: table contains level of each family background and school characteristic by SEP quintile. Missing dummies for each characteristic are not shown. The final column shows the difference in each characteristic between the top and bottom SEP quintile, accompanied by the significance levels obtained by estimating the means across SEP quintiles and taking the survey design into account. ** indicates significance at the 1% level; * indicates significance at the 5% level.

Table A3 Components of SEP index, by SEP quintile

	Poorest quintile (Q1)	2 nd quintile (Q2)	Middle quintile (Q3)	4 th quintile (Q4)	Richest quintile (Q5)	Q5-Q1
Log of permanent (average W1-W3) income	9.171	9.44	9.675	9.931	10.421	1.250**
IDACI score	35.7%	24.7%	18.3%	14.3%	10.5%	-25.2ppts**
Managing well financially	8.4%	29.5%	54.7%	73.6%	94.2%	85.8ppts**
Just getting by financially	70.1%	65.2%	43.7%	25.9%	5.8%	-64.3ppts**
In financial difficulty	21.5%	5.3%	1.6%	0.5%	0.0%	-21.5ppts**
Mum's occupation: Non-skilled	25.5%	17.2%	7.9%	3.1%	0.4%	-25.1ppts**
Mum's occupation: Semi-skilled	34.7%	45.2%	39.8%	23.5%	7.2%	-27.5ppts**
Mum's occupation: Skilled manual	2.6%	7.0%	11.0%	8.6%	4.6%	2.0ppts**
Mum's occupation: Skilled non-manual	4.2%	13.1%	17.5%	25.9%	20.9%	16.7ppts**
Mum's occupation: Managerial/professional	2.6%	10.5%	21.3%	38.3%	66.8%	64.2ppts**
Dad's occupation: Non-skilled	35.8%	19.4%	10.1%	4.2%	0.1%	-35.7ppts**
Dad's occupation: Semi-skilled	34.7%	41.0%	33.6%	19.4%	2.6%	-32.1ppts**
Dad's occupation: Skilled manual	10.5%	21.5%	26.1%	19.4%	7.1%	-3.4ppts**
Dad's occupation: Skilled non-manual	1.3%	3.2%	5.0%	6.5%	3.7%	2.4ppts**
Dad's occupation: Managerial/professional	2.6%	12.4%	24.7%	50.3%	86.6%	84.0ppts**
Tenure: Owned outright	2.3%	8.6%	11.1%	14.0%	16.9%	14.6ppts**
Tenure: Owned with mortgage	12.6%	56.8%	77.0%	81.4%	81.7%	69.1ppts**
Tenure: Other owning/renting	10.3%	9.2%	5.1%	3.1%	1.0%	-9.2ppts**
Tenure: Socially rented	74.8%	25.4%	6.9%	1.4%	0.3%	-74.5ppts**

Notes: table contains component of the by SEP index, by the quintiles of that index. Missing values were imputed by multiple imputation before generating the index. The final column shows the difference in each component between the top and bottom SEP quintile, accompanied by the significance levels obtained by estimating the means across SEP quintiles and taking the survey design into account. ** indicates significance at the 1% level; * indicates significance at the 5% level.

Figure A1 Explaining the socio-economic gap at age 16: decomposition analysis, controlling for Key Stage 2 and Key Stage 3 results



Notes: the relative contribution of each set of factors is calculated by multiplying the difference in the proportions of rich and poor with each characteristic by the coefficient estimates from a regression model including all characteristics simultaneously.