**Appendix A – Transition and Mobility Matrices**

**Table A1: Transition matrix by quintile, complete sample**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.52 | 0.25 | 0.13 | 0.08 | 0.03 |
| 2 | 0.25 | 0.30 | 0.25 | 0.13 | 0.06 |
| 3 | 0.15 | 0.24 | 0.28 | 0.24 | 0.10 |
| 4 | 0.07 | 0.15 | 0.22 | 0.32 | 0.23 |
| 5 | 0.01 | 0.06 | 0.12 | 0.23 | 0.58 |

**Table A2: Transition matrix by quintile, males**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.57 | 0.22 | 0.14 | 0.07 | 0.02 |
| 2 | 0.25 | 0.29 | 0.26 | 0.14 | 0.06 |
| 3 | 0.11 | 0.23 | 0.30 | 0.25 | 0.11 |
| 4 | 0.06 | 0.12 | 0.25 | 0.35 | 0.21 |
| 5 | 0.01 | 0.06 | 0.14 | 0.26 | 0.53 |

**Table A3: Transition matrix by quintile, females**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.47 | 0.28 | 0.12 | 0.09 | 0.03 |
| 2 | 0.25 | 0.32 | 0.24 | 0.12 | 0.06 |
| 3 | 0.19 | 0.25 | 0.25 | 0.23 | 0.09 |
| 4 | 0.08 | 0.18 | 0.19 | 0.29 | 0.26 |
| 5 | 0.01 | 0.05 | 0.10 | 0.20 | 0.63 |

**Table A4: Transition matrix by quintile, maternal education level 1**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.55 | 0.18 | 0.13 | 0.08 | 0.06 |
| 2 | 0.23 | 0.31 | 0.24 | 0.15 | 0.07 |
| 3 | 0.14 | 0.23 | 0.30 | 0.20 | 0.13 |
| 4 | 0.09 | 0.18 | 0.13 | 0.32 | 0.27 |
| 5 | 0.01 | 0.05 | 0.09 | 0.19 | 0.65 |

**Table A5: Transition matrix by quintile, maternal education level 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.52 | 0.25 | 0.14 | 0.07 | 0.02 |
| 2 | 0.29 | 0.27 | 0.24 | 0.11 | 0.08 |
| 3 | 0.18 | 0.27 | 0.25 | 0.20 | 0.09 |
| 4 | 0.07 | 0.12 | 0.25 | 0.31 | 0.25 |
| 5 | 0.01 | 0.06 | 0.09 | 0.22 | 0.61 |

**Table A6: Transition matrix by quintile, maternal education level 3**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.52 | 0.26 | 0.15 | 0.06 | 0.01 |
| 2 | 0.26 | 0.35 | 0.23 | 0.13 | 0.03 |
| 3 | 0.11 | 0.23 | 0.25 | 0.30 | 0.10 |
| 4 | 0.07 | 0.13 | 0.27 | 0.32 | 0.21 |
| 5 | 0.02 | 0.08 | 0.10 | 0.30 | 0.49 |

**Table A7: Transition matrix by quintile, maternal education level 4**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.46 | 0.33 | 0.10 | 0.10 | 0.01 |
| 2 | 0.20 | 0.32 | 0.31 | 0.15 | 0.02 |
| 3 | 0.11 | 0.20 | 0.34 | 0.29 | 0.06 |
| 4 | 0.05 | 0.19 | 0.26 | 0.34 | 0.16 |
| 5 | 0.02 | 0.03 | 0.26 | 0.27 | 0.41 |

**Table A8: Mobility matrix by BMI category, total sample**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 2 | 3 |
| 1 | 0.86 | 0.12 | 0.02 |
| 2 | 0.40 | 0.44 | 0.17 |
| 3 | 0.19 | 0.35 | 0.46 |

**Table A9: Mobility matrix by BMI category, males**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 2 | 3 |
| 1 | 0.86 | 0.12 | 0.02 |
| 2 | 0.43 | 0.39 | 0.18 |
| 3 | 0.27 | 0.40 | 0.33 |

**Table A10: Mobility matrix by BMI category, females**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 2 | 3 |
| 1 | 0.86 | 0.13 | 0.01 |
| 2 | 0.37 | 0.47 | 0.16 |
| 3 | 0.13 | 0.32 | 0.55 |

**Table A11: Mobility matrix by BMI category, maternal education level 1**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 2 | 3 |
| 1 | 0.83 | 0.14 | 0.03 |
| 2 | 0.32 | 0.44 | 0.24 |
| 3 | 0.18 | 0.34 | 0.48 |

**Table A12: Mobility matrix by BMI category, maternal education level 2**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.86 | 0.13 | 0.01 |
| Overweight | 0.38 | 0.45 | 0.17 |
| Obese | 0.17 | 0.38 | 0.45 |

**Table A13: Mobility matrix by BMI category, maternal education level 3**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.87 | 0.11 | 0.02 |
| Overweight | 0.51 | 0.39 | 0.10 |
| Obese | 0.25 | 0.28 | 0.47 |

**Table A14: Mobility matrix by BMI category, maternal education level 4**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.89 | 0.10 | 0.01 |
| Overweight | 0.48 | 0.45 | 0.07 |
| Obese | 0.20 | 0.43 | 0.37 |

**Table A15: Test statistics for null of equality of Shorrocks indices**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Wave 1 to 3** | **Wave 1 to 2** | **Wave 2 to 3** |
|  | **Transition** | **Mobility** | **Transition** | **Mobility** | **Transition** | **Mobility** |
| **Male/Female** | -71.7\*\*\* | 251.0\*\*\* | -144.5\*\*\* | 183.5\*\*\* | 3.2 | 216.1\*\*\* |

**Wave 1 to Wave 3 - Transition**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | -48.0\*\*\* |  |  |  |
| **Educ Level 3** | -55.4\*\*\* | -14.7\*\*\* |  |  |
| **Educ Level 4** | -76.3\*\*\* | -48.3\*\*\* | -29.8\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 2 - Transition**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 16.6\*\*\* |  |  |  |
| **Educ Level 3** | -16.1\*\*\* | -50.3\*\*\* |  |  |
| **Educ Level 4** | -5.9\*\* | -35.8\*\*\* | 15.5\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 2 to Wave 3 - Transition**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 61.7\*\*\* |  |  |  |
| **Educ Level 3** | 70.7\*\*\* | 18.0\*\*\* |  |  |
| **Educ Level 4** | 68.3\*\*\* | 13.1\*\*\* | -5.1\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 3 - Mobility**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 1.3 |  |  |  |
| **Educ Level 3** | -8.7\*\* | -13.4\*\*\* |  |  |
| **Educ Level 4** | -9.3\*\* | -13.5\*\*\* | -1.4 |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 2 - Mobility**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 0.7 |  |  |  |
| **Educ Level 3** | -49.7\*\*\* | -67.4\*\*\* |  |  |
| **Educ Level 4** | 25.7\*\*\* | 32.0\*\*\* | 84.5\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 2 to Wave 3 - Mobility**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 21.6\*\*\* |  |  |  |
| **Educ Level 3** | -1.9 | -26.1\*\*\* |  |  |
| **Educ Level 4** | 28.8\*\*\* | -57.3\*\*\* | -29.0\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Table A15: Test statistics for null of equality of Fields-Ok indices**

**Fields-Ok - Non-directional**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Wave 1 to 3** | **Wave 1 to 2** | **Wave 2 to 3** |
|  | **Total** | **Top 20%** | **Total** | **Top 20%** | **Total** | **Top 20%** |
| **Male/Female** | -116.6\*\*\* | 9.3\*\*\* | -259.2\*\*\* | 0 | 0 | 80.55\*\*\* |

**Fields –Ok - Directional**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Wave 1 to 3** | **Wave 1 to 2** | **Wave 2 to 3** |
|  | **Total** | **Top 20%** | **Total** | **Top 20%** | **Total** | **Top 20%** |
| **Male/Female** | -21.8\*\*\* | -51.7\*\*\* | -18.0\*\*\* | 2.4\*\* | -7.9\*\*\* | 59.7\*\*\* |

**Wave 1 to Wave 3 – Non-Directional**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 109.2\*\*\* |  |  |  |
| **Educ Level 3** | 133.8\*\*\* | 68.6\*\*\* |  |  |
| **Educ Level 4** | 135.2\*\*\* | 71.6\*\*\* | 0 |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 2 – Non-Directional**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 93.5\*\*\* |  |  |  |
| **Educ Level 3** | 92.0\*\*\* | 0 |  |  |
| **Educ Level 4** | 118.3\*\*\* | 42.9\*\*\* | 41.1\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 2 to Wave 3 - Non-Directional**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 63.7\*\*\* |  |  |  |
| **Educ Level 3** | 58.6\*\*\* | 0 |  |  |
| **Educ Level 4** | 25.3\*\*\* | -71.7\*\*\* | -54.7\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 3 – Non-Directional – top 20%**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 77.1\*\*\* |  |  |  |
| **Educ Level 3** | 48.7\*\*\* | -30.0\*\*\* |  |  |
| **Educ Level 4** | 45.8\*\*\* | -36.2\*\*\* | -4.6\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 2 – Non-Directional – top 20%**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 92.6\*\*\* |  |  |  |
| **Educ Level 3** | 16.7\*\*\* | -80.0\*\*\* |  |  |
| **Educ Level 4** | 34.2\*\*\* | -62.0\*\*\* | 18.2\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 2 to Wave 3 - Non-Directional – top 20%**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 59.0\*\*\* |  |  |  |
| **Educ Level 3** | 62.6\*\*\* | 6.9\*\*\* |  |  |
| **Educ Level 4** | -29.9\*\*\* | -105.9\*\*\* | -108.5\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 3 - Directional**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 32.6\*\*\* |  |  |  |
| **Educ Level 3** | 36.7\*\*\* | 10.8\*\*\* |  |  |
| **Educ Level 4** | 10.1\*\*\* | -36.5\*\*\* | -39.8\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 2 - Directional**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 47.6\*\*\* |  |  |  |
| **Educ Level 3** | 62.8\*\*\* | 29.8\*\*\* |  |  |
| **Educ Level 4** | 43.6\*\*\* | -3.3\*\*\* | -30.0\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 2 to Wave 3 – Directional**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | -7.5\*\*\* |  |  |  |
| **Educ Level 3** | -17.3\*\*\* | -17.7\*\*\* |  |  |
| **Educ Level 4** | -30.1\*\*\* | -41.8\*\*\* | -19.7\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 3 - Directional – top 20%**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 5.9\*\*\* |  |  |  |
| **Educ Level 3** | 32.6\*\*\* | 38.1\*\*\* |  |  |
| **Educ Level 4** | 32.5\*\*\* | 36.5\*\*\* | 1.91\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 1 to Wave 2 – Directional – top 20%**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 14.8\*\*\* |  |  |  |
| **Educ Level 3** | 38.0\*\*\* | 32.7\*\*\* |  |  |
| **Educ Level 4** | 23.3\*\*\* | 14.3\*\*\* | -14.4\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Wave 2 to Wave 3 - Directional – top 20%**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Educ Level 1** |  |  |  |  |
| **Educ Level 2** | 3.94\*\*\* |  |  |  |
| **Educ Level 3** | 3.1\*\*\* | -0.3 |  |  |
| **Educ Level 4** | 32.3\*\*\* | 37.4\*\*\* | 30.9\*\*\* |  |
|  | **Educ Level 1** | **Educ Level 2** | **Educ Level 3** | **Educ Level 4** |

**Table A16: Shorrocks Index for Mobility Combining Obese and Overweight into One Category**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Wave 1 to 3** | **Wave 1 to 2** | **Wave 2 to 3** |
| **Total** | 0.494 | 0.392 | 0.420 |
| **Male** | 0.543 | 0.387 | 0.449 |
| **Female** | 0.454 | 0.396 | 0.394 |
| **Education Level 1** | 0.454 | 0.379 | 0.400 |
| **Education Level 2** | 0.480 | 0.376 | 0.416 |
| **Education Level 3** | 0.597 | 0.457 | 0.430 |
| **Education Level 4** | 0.555 | 0.430 | 0.510 |

**Appendix B: Mobility Amongst Principal Carers**

In this section of the paper we replicate the analysis for the principal carers of the adolescents in the main part of the paper. We do this for two reasons: first of all, the issue is of interest in its own right and secondly it also gives us results with which to compare the results for the adolescents.

The data source is as in the main part of the paper, the GUI survey except that now our focus of analysis is the principal carer of the study child. In almost all cases this is the birth mother and we drop those observations where it is not. Unlike the case with adolescents we do not have to concern ourselves with different BMI thresholds by age and gender. We use the standard thresholds of 25 for overweight and 30 for obesity.

**Table B1: Rank-rank regressions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Total** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Dependent variable: fractional rank in wave 3** |
| **Rank, Wave 1** | 0.771(0.009) | 0.765(0.024) | 0.765(0.016) | 0.796(0.017) | 0.758(0.016) |
| **Constant** | 0.097(0.005) | 0.106(0.014) | 0.094(0.008) | 0.094(0.009) | 0.095(0.008) |
| **TMR** | 3.321 | 1.207 | 7.286 | 1.580 | 7.196 |
| **N** | 4909 | 627 | 1535 | 1272 | 1418 |

**Table B2: Quantile regressions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Total** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Dependent variable: log BMI in wave 3** |
| **Log BMI Wave 1, q=50** | 0.908\*\*\*(0.010) | 0.898\*\*\*(0.028) | 0.912\*\*\*(0.019) | 0.912\*\*\*(0.018) | 0.901\*\*\*(0.018) |
| **Log BMI, Wave 1, q=90** | 0.859\*\*\*(0.017) | 0.824\*\*\*(0.063) | 0.868\*\*\*(0.030) | 0.815\*\*\*(0.034) | 0.873\*\*\*(0.032) |
| **Log BMI, Wave 1, q90-q50** | -0.048\*\*\*(0.018) | -0.074(0.053) | -0.044\*\*(0.022) | -0.098\*\*\*(0.027) | -0.028(0.035) |
| **N** | 4909 | 627 | 1535 | 1272 | 1418 |

**Table B3: Mobility indices**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Shorrocks****Transition** | **Shorrocks****Mobility** | **Fields-Ok****Non-D** | **Fields-Ok****Direct** | **Fields-Ok****Non-D****Top 20%** | **Fields-Ok****Direct****Top 20%** |
| **Total Sample** | 0.61 | 0.480 | 0.082 | 0.030 | 0.088 | -0.007 |
| **Educ level 1** | 0.629 | 0.474 | 0.092 | 0.031 | 0.090 | 0.017 |
| **Educ level 2** | 0.618 | 0.498 | 0.084 | 0.026 | 0.093 | -0.028 |
| **Educ level 3** | 0.581 | 0.471 | 0.081 | 0.040 | 0.080 | 0.015 |
| **Educ level 4** | 0.621 | 0.493 | 0.076 | 0.029 | 0.087 | -0.035 |

**Table B4: Transition matrix by quintile, complete sample**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.75 | 0.16 | 0.05 | 0.03 | 0.01 |
| 2 | 0.4 | 0.35 | 0.16 | 0.08 | 0.01 |
| 3 | 0.13 | 0.31 | 0.34 | 0.19 | 0.05 |
| 4 | 0.06 | 0.1 | 0.23 | 0.46 | 0.16 |
| 5 | 0.01 | 0.03 | 0.04 | 0.25 | 0.67 |

**Table B5: Transition matrix by quintile, maternal education level 1**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.65 | 0.22 | 0.07 | 0.04 | 0.01 |
| 2 | 0.44 | 0.28 | 0.19 | 0.09 | 0 |
| 3 | 0.11 | 0.28 | 0.35 | 0.18 | 0.09 |
| 4 | 0.09 | 0.14 | 0.2 | 0.46 | 0.11 |
| 5 | 0.01 | 0 | 0.02 | 0.22 | 0.75 |

**Table B6: Transition matrix by quintile, maternal education level 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.79 | 0.14 | 0.04 | 0.03 | 0 |
| 2 | 0.34 | 0.39 | 0.17 | 0.1 | 0 |
| 3 | 0.16 | 0.33 | 0.28 | 0.19 | 0.05 |
| 4 | 0.04 | 0.08 | 0.26 | 0.44 | 0.18 |
| 5 | 0.02 | 0.04 | 0.07 | 0.24 | 0.63 |

**Table B7: Transition matrix by quintile, maternal education level 3**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.74 | 0.16 | 0.06 | 0.02 | 0.02 |
| 2 | 0.48 | 0.31 | 0.12 | 0.07 | 0.02 |
| 3 | 0.1 | 0.28 | 0.4 | 0.21 | 0.02 |
| 4 | 0.03 | 0.07 | 0.18 | 0.53 | 0.2 |
| 5 | 0 | 0.03 | 0.02 | 0.25 | 0.7 |

**Table B8: Transition matrix by quintile, maternal education level 4**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| 1 | 0.74 | 0.16 | 0.06 | 0.02 | 0.02 |
| 2 | 0.48 | 0.31 | 0.12 | 0.07 | 0.02 |
| 3 | 0.1 | 0.28 | 0.4 | 0.21 | 0.02 |
| 4 | 0.03 | 0.07 | 0.18 | 0.53 | 0.2 |
| 5 | 0 | 0.03 | 0.02 | 0.25 | 0.7 |

**Table B9: Mobility matrix by BMI category, total sample**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.64 | 0.29 | 0.07 |
| Overweight | 0.12 | 0.56 | 0.33 |
| Obese | 0.02 | 0.13 | 0.85 |

**Table B10: Mobility matrix by BMI category, maternal education level 1**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.6 | 0.32 | 0.08 |
| Overweight | 0.11 | 0.56 | 0.33 |
| Obese | 0.01 | 0.11 | 0.89 |

**Table B11: Mobility matrix by BMI category, maternal education level 2**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.64 | 0.3 | 0.06 |
| Overweight | 0.14 | 0.54 | 0.33 |
| Obese | 0.03 | 0.14 | 0.83 |

**Table B12: Mobility matrix by BMI category, maternal education level 3**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.63 | 0.3 | 0.07 |
| Overweight | 0.1 | 0.54 | 0.36 |
| Obese | 0.01 | 0.11 | 0.88 |

**Table B13: Mobility matrix by BMI category, maternal education level 4**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Normal | Overweight | Obese |
| Normal | 0.68 | 0.24 | 0.08 |
| Overweight | 0.1 | 0.61 | 0.29 |
| Obese | 0.02 | 0.25 | 0.73 |

**Appendix C – Principal Results by Maternal Education**

**Table C1: Normalised BMI, Obesity, Overweight by education of principal carer, waves 1-3 (standard errors)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Wave 1** | **Wave 2** | **Wave 3** |
| **Lower Secondary** |  |  |  |
| BMI Norm Ob | 0.781*0.006* | 0.773*0.006* | 0.803*0.007* |
| BMI Norm Ov | 0.940*0.007* | 0.948*0.008* | 0.964*0.008* |
| Obesity % | 0.087*0.01* | 0.107*0.01* | 0.117*0.01* |
| Overweight % | 0.219*0.017* | 0.218*0.017* | 0.220*0.017* |
| **Complete Secondary** |  |  |  |
| BMI Norm Ob | 0.761*0.004* | 0.745*0.004* | 0.775*0.004* |
| BMI Norm Ov | 0.914*0.004* | 0.913*0.004* | 0.930*0.004* |
| Obesity % | 0.050*0.006* | 0.040*0.005* | 0.065*0.007* |
| Overweight % | 0.197*0.012* | 0.217*0.012* | 0.207*0.012* |
| **Diploma/Cert** |  |  |  |
| BMI Norm Ob | 0.755*0.004* | 0.736*0.004* | 0.767*0.004* |
| BMI Norm Ov | 0.909*0.005* | 0.902*0.005* | 0.921*0.005* |
| Obesity % | 0.044*0.008* | 0.033*0.005* | 0.058*0.009* |
| Overweight % | 0.186*0.014* | 0.174*0.013* | 0.170*0.013* |
| **Third Level** |  |  |  |
| BMI Norm Ob | 0.739*0.004* | 0.724*0.004* | 0.755*0.003* |
| BMI Norm Ov | 0.889*0.005* | 0.887*0.005* | 0.907*0.004* |
| Obesity % | 0.022*0.005* | 0.023*0.005* | 0.025*0.004* |
| Overweight % | 0.157*0.014* | 0.156*0.015* | 0.163*0.014* |

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**Table C2: Normalised BMI, Obesity, Overweight by education of principal carer, waves 1-3 (standard errors) – Males only**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Wave 1** | **Wave 2** | **Wave 3** |
| **Lower Secondary** |  |  |  |
| BMI Norm Ob | 0.759*0.008* | 0.750*0.008* | *0.775**0.008* |
| BMI Norm Ov | 0.912*0.009* | 0.917*0.010* | 0.931*0.010* |
| Obesity % | 0.055*0.012* | 0.070*0.015* | 0.087*0.018* |
| Overweight % | 0.164*0.021* | 0.192*0.023* | 0.183*0.023* |
| **Complete Secondary** |  |  |  |
| BMI Norm Ob | 0.764*0.005* | 0.748*0.005* | 0.777*0.005* |
| BMI Norm Ov | 0.919*0.057* | 0.915*0.006* | 0.933*0.006* |
| Obesity % | 0.045*0.008* | 0.036*0.007* | 0.071*0.010* |
| Overweight % | 0.202*0.017* | 0.227*0.018* | 0.194*0.017* |
| **Diploma/Cert** |  |  |  |
| BMI Norm Ob | 0.755*0.007* | 0.737*0.005* | 0.768*0.006* |
| BMI Norm Ov | 0.908*0.008* | 0.902*0.006* | 0.922*0.007* |
| Obesity % | 0.049*0.014* | 0.030*0.017* | 0.055*0.013* |
| Overweight % | 0.160*0.018* | 0.151*0.018* | 0.160*0.018* |
| **Third Level** |  |  |  |
| BMI Norm Ob | 0.737*0.004* | 0.724*0.005* | 0.758*0.005* |
| BMI Norm Ov | 0.886*0.005* | 0.886*0.006* | 0.910*0.005* |
| Obesity % | 0.015*0.004* | 0.019*0.005* | 0.021*0.005* |
| Overweight % | 0.137*0.017* | 0.157*0.020* | 0.171*0.020* |

**Table C3: Normalised BMI, Obesity, Overweight by education of principal carer, waves 1-3 (standard errors) – Females only**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Wave 1** | **Wave 2** | **Wave 3** |
| **Lower Secondary** |  |  |  |
| BMI Norm Ob | 0.802*0.008* | 0.796*0.009* | 0.829*0.010* |
| BMI Norm Ov | 0.967*0.010* | 0.976*0.011* | 0.995*0.012* |
| Obesity % | 0.116*0.019* | 0.141*0.021* | 0.148*0.021* |
| Overweight % | 0.270*0.026* | 0.241*0.025* | 0.259*0.025* |
| **Complete Secondary** |  |  |  |
| BMI Norm Ob | 0.757*0.005* | 0.743*0.005* | 0.772*0.005* |
| BMI Norm Ov | 0.913*0.006* | 0.911*0.006* | 0.927*0.006* |
| Obesity % | 0.055*0.010* | 0.040*0.007* | 0.058*0.009* |
| Overweight % | 0.191*0.016* | 0.206*0.017* | 0.221*0.017* |
| **Diploma/Cert** |  |  |  |
| BMI Norm Ob | 0.754*0.006* | 0.735*0.006* | 0.766*0.006* |
| BMI Norm Ov | 0.909*0.007* | 0.902*0.007* | 0.920*0.008* |
| Obesity % | 0.037*0.007* | 0.036*0.008* | 0.061*0.012* |
| Overweight % | 0.220*0.021* | 0.203*0.020* | 0.182*0.020* |
| **Third Level** |  |  |  |
| BMI Norm Ob | 0.741*0.007* | 0.724*0.006* | 0.752*0.005* |
| BMI Norm Ov | 0.894*0.009* | 0.888*0.007* | 0.903*0.006* |
| Obesity % | 0.031*0.010* | 0.028*0.006* | 0.029*0.007* |
| Overweight % | 0.180*0.024* | 0.155*0.022* | 0.154*0.021* |

**Table C4a: Rank-rank regression, wave 1 to wave 3**

|  |
| --- |
| **Dependent variable: Fractional rank, wave 3** |
|  | **Male** | **Female** |
|  | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Rank, Wave 1** | 0.585\*\*\*(0.052) | 0.673\*\*\*(0.030) | 0.629\*\*\*(0.034) | 0.607\*\*\*(0.032) | 0.647\*\*\*(0.041) | 0.636\*\*\*(0.027) | 0.614\*\*\*(0.043) | 0.512\*\*\*(0.043) |
| **TMR** | -2.188\*\* | -0.008 | 3.338 | 3.719 | 2.146 | 3.959\*\* | 3.527\* | 2.482 |
| **N** | 353 | 816 | 715 | 818 | 431 | 881 | 708 | 765 |

\*\*\*=p≤0.01, \*\*=0.01p≤0.05, \*=0.05<p≤0.1

**Table C4b: Rank-rank regression, wave 1 to wave 2**

|  |
| --- |
| **Dependent variable: Fractional rank, wave 2** |
|  | **Male** | **Female** |
|  | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Rank, Wave 1** | 0.779\*\*\*(0.037) | 0.798\*\*\*(0.025) | 0.719\*\*\*(0.026) | 0.780\*\*\*(0.031) | 0.717\*\*\*(0.035) | 0.707\*\*\*(0.025) | 0.724\*\*\*(0.042) | 0.700\*(0.033) |
| **TMR** | -0.024 | 0.922 | 3.446\*\*\* | 2.791 | 3.557\*\* | 1.881 | 2.143 | 2.175 |
| **N** | 353 | 816 | 715 | 818 | 431 | 881 | 708 | 765 |

\*\*\*=p≤0.01, \*\*=0.01p≤0.05, \*=0.05<p≤0.1

**Table C4c: Rank-rank regression, wave 2 to wave 3**

|  |
| --- |
| **Dependent variable: Fractional rank, wave 3** |
|  | **Male** | **Female** |
|  | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Rank, Wave 2** | 0.678\*\*\*(0.045) | 0.740\*\*\*(0.027) | 0.732\*\*\*(0.032) | 0.657\*\*\*(0.028) | 0.781\*\*\*(0.033) | 0.763\*\*\*(0.023) | 0.740\*\*\*(0.030) | 0.707\*\*\*(0.032) |
| **TMR** | 0.672 | 1.974 | 3.911\*\* | -0.775 | 1.898 | 1.652 | 1.961 | 1.981 |
| **N** | 353 | 816 | 715 | 818 | 431 | 881 | 708 | 765 |

\*\*\*=p≤0.01, \*\*=0.01p≤0.05, \*=0.05<p≤0.1

**Table C4d: Interquartile range regressions (0.9-0.5), wave 1 to wave 3**

|  |
| --- |
| **Dependent variable: Log normalised BMI, wave 3** |
|  | **Male** | **Female** |
|  | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Log BMI, Wave 1 q50** | 0.625\*\*\*(0.049) | 0.735\*\*\*(0.032) | 0.637\*\*\*(0.035) | 0.580\*\*\*(0.033) | 0.793\*\*\*(0.046) | 0.704\*\*\*(0.030) | 0.677\*\*\*(0.031) | 0.597\*\*\*(0.034) |
| **Log BMI, Wave 1 q90** | 0.686\*\*\*(0.011) | 0.708\*\*\*(0.060) | 0.702\*\*\*(0.057) | 0.641\*\*\*(0.064) | 0.882\*\*\*(0.069) | 0.721\*\*\*(0.064) | 0.856\*\*\*(0.058) | 0.773\*\*\*(0.055) |
| **Log BMI, Wave 1, q90-q50** | 0.061(0.092) | -0.027(0.044) | 0.065(0.053) | 0.061(0.080) | 0.088(0.075) | 0.016(0.060) | 0.179\*\*\*(0.041) | 0.176\*\*\*(0.051) |
| **N** | 353 | 816 | 715 | 818 | 431 | 881 | 708 | 765 |

**Table C4e: Interquartile range regressions (0.9-0.5), wave 1 to wave 2**

|  |
| --- |
| **Dependent variable: Log normalised BMI, wave 2** |
|  | **Male** | **Female** |
|  | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Log BMI, Wave 1 q50** | 0.864\*\*\*(0.047) | 0.927\*\*\*(0.026) | 0.866\*\*\*(0.028) | 0.866\*\*\*(0.026) | 0.882\*\*\*(0.042) | 0.846\*\*\*(0.027) | 0.878\*\*\*(0.029) | 0.844\*\*\*(0.029) |
| **Log BMI, Wave 1 q90** | 0.809\*\*\*(0.096) | 0.837\*\*\*(0.057) | 0.840\*\*\*(0.045) | 0.844\*\*\*(0.050) | 0.876\*\*\*(0.090) | 0.749\*\*\*(0.050) | 0.882\*\*\*(0.046) | 0.821\*\*\*(0.047) |
| **Log BMI, Wave 1, q90-q50** | -0.055(0.087) | -0.080\*(0.044) | -0.026(0.046) | -0.023(0.041) | -0.005(0.053) | -0.098\*\*(0.046) | 0.003(0.052) | -0.024(0.052) |
| **N** | 353 | 816 | 715 | 818 | 431 | 881 | 708 | 765 |

**Table C4f: Interquartile range regressions (0.9-0.5), wave 2 to wave 3**

|  |
| --- |
| **Dependent variable: Log normalised BMI, wave 3** |
|  | **Male** | **Female** |
|  | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** | **Educ=1** | **Educ=2** | **Educ=3** | **Educ=4** |
| **Log BMI, Wave 2 q50** | 0.717\*\*\*(0.041) | 0.757\*\*\*(0.025) | 0.743\*\*\*(0.029) | 0.643\*\*\*(0.027) | 0.837\*\*\*(0.034) | 0.781\*\*\*(0.023) | 0.716\*\*\*(0.026) | 0.721\*\*\*(0.027) |
| **Log BMI, Wave 2 q90** | 0.779\*\*\*(0.084) | 0.800\*\*\*(0.039) | 0.708\*\*\*(0.052) | 0.707\*\*\*(0.039) | 0.847\*\*\*(0.035) | 0.797\*\*\*(0.021) | 0.831\*\*\*(0.042) | 0.801\*\*\*(0.044) |
| **Log BMI, Wave 2, q90-q50** | 0.062(0.079) | 0.043(0.040) | -0.035(0.050) | 0.064(0.046) | 0.009(0.049) | 0.017(0.046) | 0.115\*\*(0.051) | 0.081\*\*(0.041) |
| **N** | 353 | 816 | 715 | 818 | 431 | 881 | 708 | 765 |

**Table C5a: Mobility indices, wave 1 to wave 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Shorrocks****Transition** | **Shorrocks****Mobility** | **Fields-Ok****Non-D** | **Fields-Ok****Direct** | **Fields-Ok****Non-D****Top 20%** | **Fields-Ok****Direct****Top 20%** |
| **Ed level 1** | 0.72 | 0.62 | 0.111 | 0.026 | 0.136 | -0.040 |
| **Ed level 2** | 0.76 | 0.62 | 0.099 | 0.018 | 0.117 | -0.046 |
| **Ed level 3** | 0.77 | 0.64 | 0.095 | 0.016 | 0.123 | -0.078 |
| **Ed level 4** | 0.78 | 0.65 | 0.095 | 0.023 | 0.124 | -0.080 |

**Table C5b: Mobility indices, wave 1 to wave 2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Shorrocks****Transition** | **Shorrocks****Mobility** | **Fields-Ok****Non-D** | **Fields-Ok****Direct** | **Fields-Ok****Non-D****Top 20%** | **Fields-Ok****Direct****Top 20%** |
| **Ed level 1** | 0.672 | 0.518 | 0.094 | -0.012 | 0.111 | -0.047 |
| **Ed level 2** | 0.655 | 0.517 | 0.083 | -0.022 | 0.091 | -0.058 |
| **Ed level 3** | 0.684 | 0.599 | 0.083 | -0.026 | 0.107 | -0.083 |
| **Ed level 4** | 0.677 | 0.474 | 0.080 | -0.021 | 0.103 | -0.069 |

**Table C5c: Mobility indices, wave 2 to wave 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Shorrocks****Transition** | **Shorrocks****Mobility** | **Fields-Ok****Non-D** | **Fields-Ok****Direct** | **Fields-Ok****Non-D****Top 20%** | **Fields-Ok****Direct****Top 20%** |
| **Ed level 1** | 0.708 | 0.508 | 0.098 | 0.038 | 0.098 | 0.006 |
| **Ed level 2** | 0.667 | 0.475 | 0.091 | 0.040 | 0.089 | 0.012 |
| **Ed level 3** | 0.658 | 0.509 | 0.091 | 0.042 | 0.096 | 0.005 |
| **Ed level 4** | 0.663 | 0.554 | 0.095 | 0.044 | 0.098 | -0.011 |

**Figure C1: BMI Mobility curve by education**



**Figure C2: BMI Absolute Mobility Curve, by education**



**Figure C3: Upward mobility dominance by maternal education, positive BMI changes only**

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