Assortative mating and wealth inequality in Great Britain: evidence from the baby boomer and Gen X cohorts.

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Background

- Partner choice - implications for determining the rate at which couples accumulate resources (Goldin, 2014; Gonalons-Pons and Schwartz, 2017; Lersch and Schunck, 2023).

- Cross country evidence shows couples belonging to the boomer generation have accumulated much higher levels of wealth than previous generations and *holdings are stratified by education level* (Gregg and Kanabar, 2023b; Hällsten, 2024; Hills, 2013).

- Scant evidence on the role educational attainment, a key factor in the process by which individuals sort into couples (Van Bavel, 2021) influences wealth inequality.
  - Particularly from an *intra and intergenerational perspective* (Charles et al, 2013; Fagereng et al. 2023).
- Policy concern about the level of wealth inequality within and across generations due to wealth being easily transferable.

Contribution -boomer generation (pseudo parent)

- Document new evidence on the sorting patterns and wealth accumulation profiles exhibited by couples belonging to the baby boomer and Gen X cohorts for Great Britain.

  Key findings among boomers:
  - Estimate the rate of positive sorting exhibited by high and low educated baby boomers is over double that expected versus random matching.
  - By age 65-69, high (low) educated baby boomer couples report median levels of total net wealth of £2.49M (£0.36M).
  - Document substantial differences in the likelihood and level of total inheritance *receipt* by couples education type.
  - Find boomer couples inheritance attitude depend on inter-alia, their own historical receipt of transfers and housing tenure.
  - Also report substantive differences in the *type and level* of expected inheritances to be made by boomers to their offspring by couple type.

Contribution- Gen X generation (pseudo offspring)

- Among degree (below degree) educated couples the level of sorting is double (over one third) the level expected compared to random matching.
- Whilst the receipt of intergenerational transfers is highly stratified by couple type, these are unlikely to explain the differences in wealth holdings observed.
- Inheritance expectations: 75% of highly educated couples aged 25-35 report that they are likely to receive an inheritance and conditional on receiving expect to receive between £100,000-£250,000 net of taxes (in 2006-08 prices).
- In contrast, close to *50%* of low educated couples do not expect to receive an inheritance.

Data

- Wealth and Assets Survey (WAS), panel dataset representative of Great Britain in 2006-08.
- Possible to construct couple level measures of total net wealth- and it's subcomponents.
- Battery of questions relating to historic and recent inheritances and gifts (recently only).
- Specific module fielded at wave 1 and round 7 of WAS regarding inheritance attitudes and expectations, and intentions, respectively.
- Focus on couples where both individuals are born between 1947-1953 (pseudo parent boomers) and couples where both individuals are born between 1973-79 (pseudo offspring Gen X).

Methods

- Follow the method developed by Chiappori et al. (2020) and Choo and Siow (2006).
  - In a nutshell, posits that sorting is driven by education, for example due to complementarity in parenting styles (Bygren and Rosenqvist, 2020; Duta and Iannello, 2018); and factors such as love, age and background become relevant once individuals have matched.
  - An oversimplification of the sorting process, however allows us to easily compare sorting by education *level* with that which would prevail under random matching.
- Also facilitates analysis given individuals formed partnerships prior to the point at which realised outcomes are observed in the data.

Methods

- There are various limitations one can think of, importantly:
  - Due to data limitations we do not calculate changes in the level of assortative mating over time, for example due to increases in educational attainment across cohorts and over time.
  - We do not include single individuals in our analysis:
    - ★ The utility gain of remaining single (the outside option) versus partnering may change over time and the size of this group has grown across successively younger cohorts.

Methods-empirical sorting matrix

Table 1: Observed sorting patterns in a market with three education types

		Women		
Men	Education level	High	Medium	Low
	High	x	y	z-x-y
	Medium	u	v	w-u-v
	Low	r-x-u	s-y-v	1+(x+y+u+v)-(r+s+z+w)

For example, x refers to the proportion of couples where both male and female are highly educated; z refers to the proportion of men who are high educated.

Methods-sorting matrix assuming random matching

Table 2: Sorting patterns assuming random matching in a market with three education types

		Women		
Men	Education level	High	Medium	Low
	High	r*z	s*z	z*(1-r-s)
	Medium	r*w	s*w	w*(1-r-s)
	Low	r*(1-z-w)	s*(1-z-w)	(1- r-s)*(1-z-w)

Cells refers to the product of couple's education type given the proportion of men and women with a particular level of educational attainment

Methods- positive sorting

- Random matching holds if the proportion of any of the education combinations reported in Table 1 is equal to that reported in Table 2, *for the same education combination*.
- Our focus is then on the diagonal elements of each matrix, i.e. among individuals with the same level of educational attainment.
  - That is, positive sorting holds among high educated individuals if $x \geq rz$.
- We do not attempt to measure the extent of sorting, only whether positive sorting is observed in the data, nor whether the level of sorting behaviour has changed over time.

Sorting in the boomer (parent) generation

Table 3: Education combinations among couples aged 55-59 in Wave 1 of WAS (2006-08)

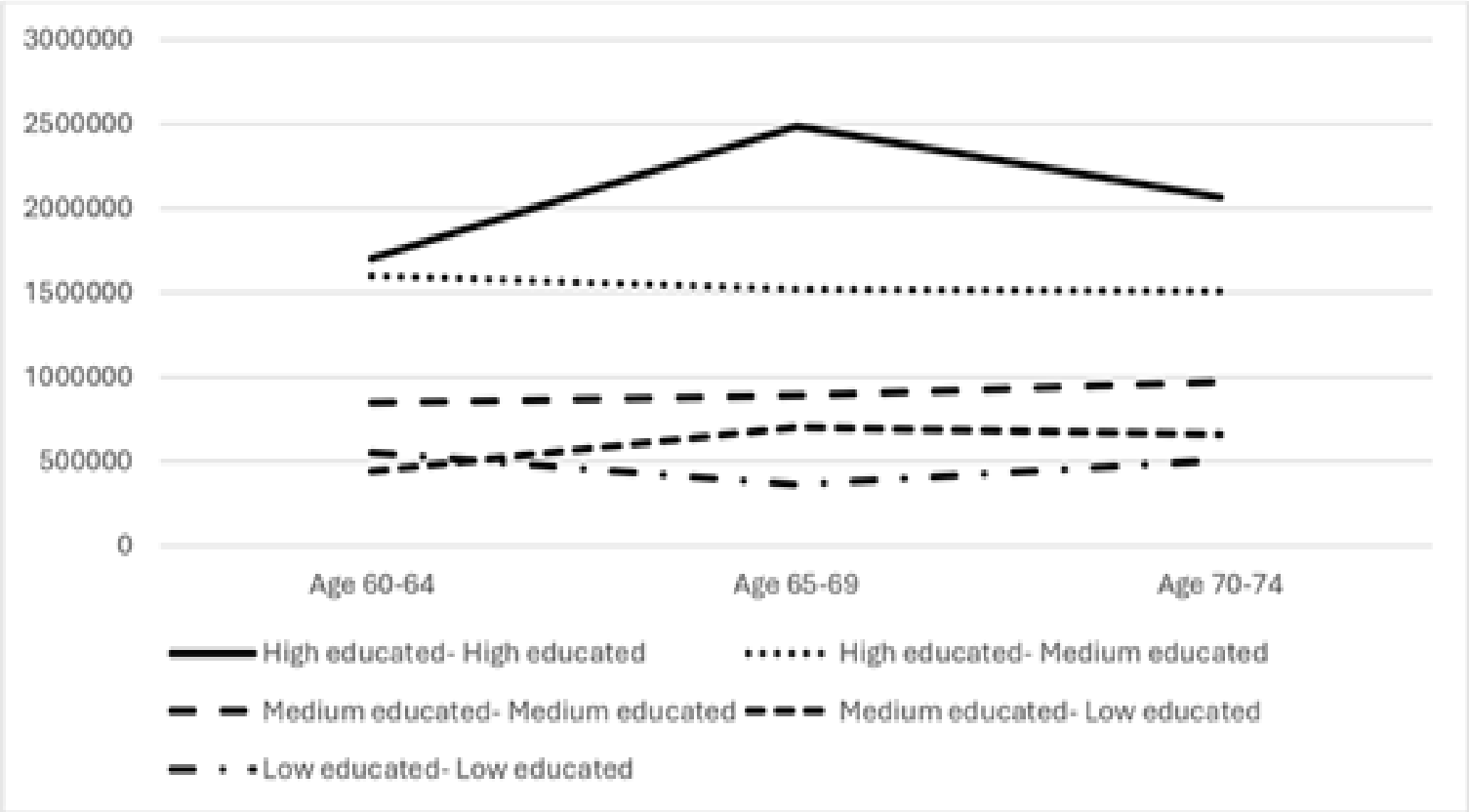
Couple level education group	Expected proportion under random matching (%)	Proportion observed empirically (%)
High educated-High educated	**4**	**11** [60]
High educated-medium educated	23	15 [80]
High-educated-low educated	8	2 [10]
Medium educated-Medium educated	**37**	**42** [227]
Medium educated-Low educated	25	23 [126]
Low educated-Low educated	**4**	**8** [42]
$N_{couples}$	545	

Notes: sample based on couples where both partners are aged between 55 and 59. Figures in square brackets refer to underlying cell sizes observed for each couple-education pairing. Cell sizes not reported for pairings under random matching due to the figure reflecting a combination of male and female underlying samples. Figure may not sum to 100 due to rounding and correspond to weighted estimates.

Significant difference in the observed and expected frequencies: we estimate a χ^2=150.67, corresponding critical value at the 1% level is 13.28.

Wealth profiles by couple's level of educational attainment

Figure 1: Median total net wealth by couple education-type in GB between 2010/12 and 2018/20



Notes: underlying sample data refers to unique couples at wave 3 and 5, and round 7 of WAS. $N_{wave\ 3}$=336, $N_{wave\ 5}$=431, and $N_{round\ 7}$=331. Figures refer to 2022 prices and weighted estimates.

Wealth profiles by couple's level of educational attainment

- Clear ordering by education level: at ages 60-64 those with the highest (lowest) levels of education report median total net wealth of £1.70M (£0.55M)
- Equivalent figures for net property, pension, financial and physical show an similar pattern
- The overall trend in total net wealth is driven by pension and housing wealth:
  - Median pension wealth among high (low) educated couples aged 60-64 in 2010-12 is around £948,500 (£192,046).
  - Equivalent statistic for housing wealth (including zeros) are £434,153 (£220,767).

Historic and recent inheritances: boomer cohort

Table 4: Average historic and recent inheritance and annual earnings among couples aged 50-60 at wave 1 of WAS (2006/08)

Education group	Proportion receiving historic inheritance	Mean value of historic (>5 years) inheritances (£)	Proportion receiving recent inheritance	Mean value of recent (≤ 5 years) inheritances (£)	Total lifetime inheritances at wave 1	Median annual couple net earnings
High educated-High educated	0.29	64,809	0.1	14,561	79,370	73,023
High educated-medium educated	0.31	53,248	0.07	4,940	58,188	52,935
Medium educated-Medium educated	0.18	16,023	0.05	3,297	19,320	40,548
Medium educated-Low educated	0.15	4,236	0.03	804	5,040	31,325
Low educated-Low educated	0.07	2,218	0.01	590	2,808	23,669
$N_{couples}$	1,709					

Notes: underlying sample data refers to unique couples at wave 1 of WAS. Figures refer to 2022 prices and weighted estimates. Annual based on reported employee and self-employed earnings.

Historic and recent inheritances: boomer cohort

- Couples with the highest levels of education are:
  - *4X* more likely to have received a historic inheritance by age 50-60
  - Conditional on receipt report a total level of inheritance which is *28 times larger* than that of low educated couples
  - The level of inheritances received by the time baby boomers reach their 50s is relatively small when compared to their total net wealth holdings and for lower educated households, their annual earnings.
  - In the case of highly educated couples, total lifetime inheritances at ages 50-60 roughly equates to annual net earnings.

The parents of babyboomers

Appendix E: Parental characteristics among individuals aged 57-61 by couple type at wave 2 of WAS (2008/10)

	Characteristics of baby boomer's parents'							
	Proportion of fathers with a degree (%)		Proportion of mothers with a degree (%)		Proportion who owned their home (%)		Proportion living with both first parents (%)	
Baby boomer couple level education group	Male partner	Female partner	Male partner	Female partner	Male partner	Female partner	Male partner	Female partner
High educated-High educated	0.06	0.06	0	0.02	0.65	0.75	0.97	0.90
High educated-Medium/Low educated	0.07	0.02	0.02	0	0.56	0.45	0.92	0.93
Medium/Low educated-Medium/Low educated	0	0	0	0	0.30	0.34	0.90	0.88
Couple level education group	Proportion of fathers working		Proportion of mothers working		Average number of siblings			
	Male partner	Female partner	Male partner	Female partner	Male partner	Female partner		
High educated-High educated	0.98	0.99	0.35	0.49	1.37	1.35		
High educated-Medium/Low educated	0.99	0.99	0.49	0.48	1.92	1.74		
Medium/Low educated-Medium/Low educated	0.98	0.98	0.53	0.50	2.37	2.28		
$N_{couples}$	416							

Notes: unique couples at wave 2 (2008-10) of WAS where both partners are aged 57-61. Figures correspond to weighted estimates.

Recent inheritance receipt: boomers

Table 5: Recent inheritance receipt by couple type between 2006/08 and 2018/20.

	Age 60-64 at wave 3		Age 65-69 wave 5		Age 70-74 at round 7	
Education group	Proportion of group receiving inheritance at wave 3	Average value of inheritances (£)	Proportion of group receiving inheritance at wave 5	Average value of inheritances (£)	Proportion of group receiving inheritance at round 7	Average value of inheritances (£)
High educated-High educated	0.29	40,754	0.27	40,930	0.15	13,095
High educated-medium educated	0.18	31,141	0.29	29,637	0.22	23,625
Medium educated-Medium educated	0.18	12,814	0.18	23,053	0.12	7,820
Medium educated-Low educated	0.12	20,381	0.16	4,441	0	0
Low educated-Low educated	0.07	6,537	0.05	1,824	0	0
$N_{couples}$	294		363		294	

Notes: sample size refers to number unique of couples. Due to the change in the WAS survey period, we account for the overlap between wave 5 and round 6 in our analysis. High educated-low educated excluded due to low cell count (<30). Figures refer to 2022 prices and are weighted estimates.

Boomers wealth

- High levels of wealth inequality in terms of total net wealth, historic and recent inheritances.
- Latter is a relatively small as a fraction of total net wealth, assuming boomer couples, especially the higher educated do not consume down all their resources in retirement: then future transfers of accumulated wealth set to play an increasingly important role for explaining wealth inequality in recipient/offspring generation.
- What factors affect inheritance attitudes and how much do boomers intend to transfer?

Inheritance attitude: Boomer's (aged 50-60, wave 1)

Table 6: Inheritance attitudes among couples aged 50-60 and own inheritances.

Covariates	Inheritance attitude
Education combination	
High educated, medium educated	-0.0313
	(0.0414)
High educated, low educated	0.0625
	(0.0880)
Medium educated, medium educated	0.0290
	(0.0353)
Medium educated, low educated	0.0852**
	(0.0396)
Low educated, low educated	0.0139
	(0.0558)
Sociodemographic characteristics	
Renting	-0.264***
	(0.0404)
Recent inheritances	0.00388
	(0.00427)
Historic inheritances	0.00679***
	(0.00262)
Age	0.111
	(0.115)
Age squared	-0.00108
	(0.00105)
Female	0.0295***
	(0.0101)
Constant	-2.130
	(3.173)
N	3,367

Notes: *** p<0.01, ** p<0.05, * p<0.1. Both partners in couple aged between 50 and 60. Wealth values reflect 2022 prices. Specification includes region dummies. Base categories: high educated couple, homeowner, male and North East. Standard errors clustered at household level.

Inheritance intentions-asset types: Boomer's (aged 65-74, Round 7

Appendix H: Inheritance intentions by couple and inheritance type

	Inheritance intention			
Couple type	Property	Cash	Other	None
Highly educated	94%	88%	82%	2%
High educated, medium educated	90%	83%	76%	8%
High educated, low education				
Both medium educated	84%	75%	66%	6%
Medium educated, low educated	62%	56%	52%	27%
Low educated	68%	48%	36%	22%
$N_{couples}$	893			

Notes: sample data based on unique couples aged 65-75 at round 7 of WAS (2018-2020). Grey box refers to cells with <30 unique couples. Weighted estimates.

Inheritance intentions-amount: Boomer's (aged 65-74, Round 7

Table 7: Mean and median value of total intended inheritance by couple type among individuals aged 65-74.

	Male partner inheritance intention		Female partner inheritance intention	
Couple type	Mean	Median	Mean	Median
Highly educated	678,312	332,406	670,470	332,406
High educated, medium educated	441,366	302,187	432,121	302,187
Both medium educated	275,990	218,586	265,164	219,950
Medium educated, low educated	177,378	124,906	171,596	124,906
Low educated	139,315	129,382	127,446	106,170
$N_{couples}$	893			

Notes: sample size refers to unique couples where both members are aged between 65-74 at round 7 of WAS (2018-2020). High educated-low educated excluded due to low cell count (<30). Weighted estimates. Figures correspond to 2022 prices.

Boomer's inheritance experience and intentions

- Whilst inheritance receipt is highly unequal, so too are intentions:
  - For example, highly educated boomers intend to bequeth (in total) on average over six times what they themselves received.
- Demographic changes (e.g., # siblings) obviously affect per heir transfers; however WAS shows lower educated couples tend to have a greater number of offspring.
- In absolute terms across all couple types pseudo-offspring couples will benefit from higher levels of inheritance compared to pseudo-parents of a similar education type, reflecting the large absolute gains in wealth experienced by the boomer generation.

Gen X (pseudo offspring, born 1973-1979): sorting matrix

Table 8: Assortative matching among individuals aged 27-35 at wave 1 of WAS.

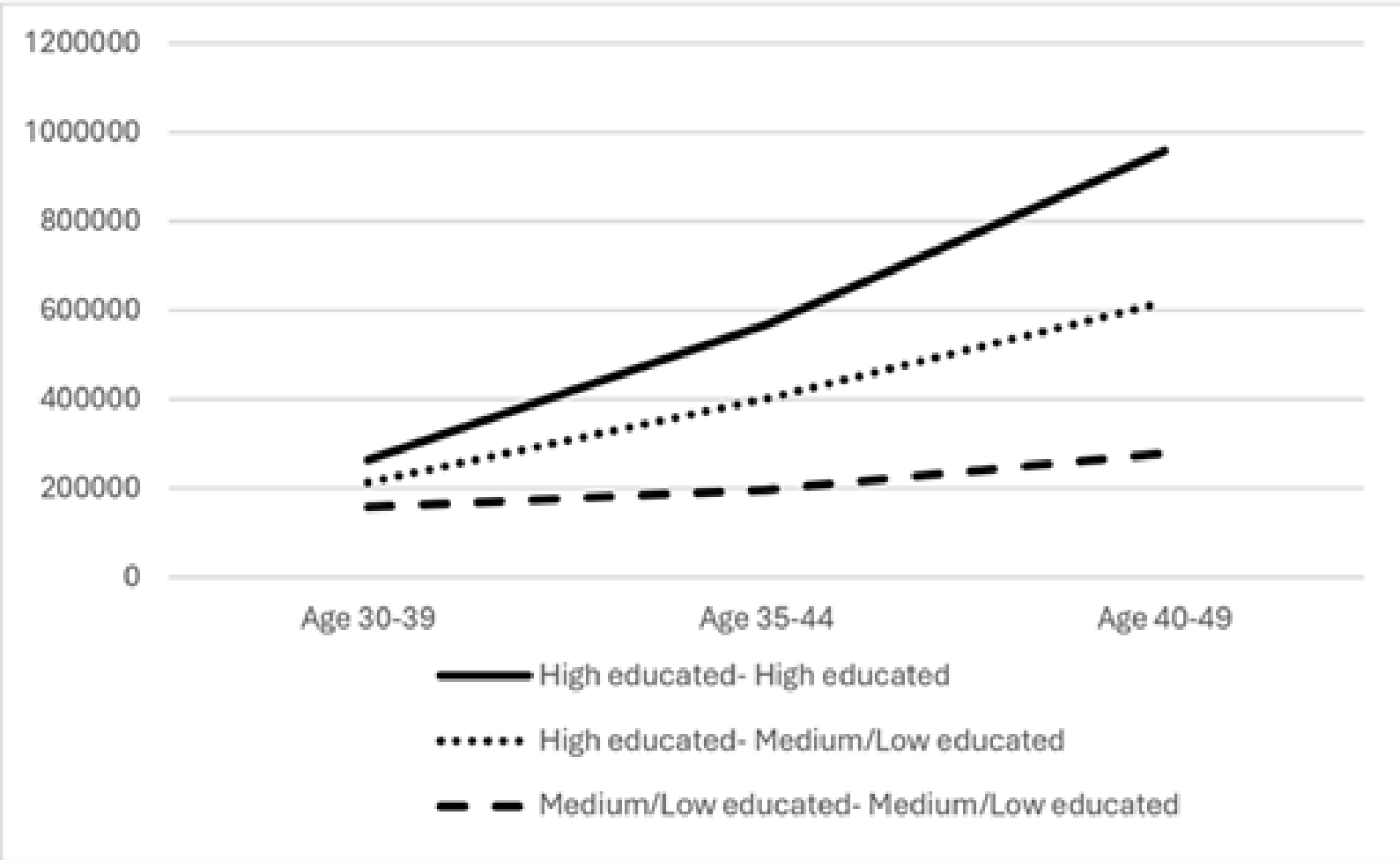
Couple level education group	Expected proportion under random matching (%)	Proportion observed empirically (%)
High educated-High educated	16	**28** [274]
High educated-Medium/Low educated	48	23 [222]
Medium/Low educated-Medium/Low educated	37	**49** [480]
$N_{couples}$	976	

Notes: couples at wave 1 (2006-08) of WAS where both partners are aged 27-35. Proportions correspond to weighted figures and may not sum to 100 due to rounding.

Significant difference in the observed and expected frequencies: we estimate a χ^2=355.27, corresponding critical value at the 1% level is 13.28.

Gen X (pseudo offspring, born 1973-1979): wealth profile

Figure 2: Median total couple net wealth by type between wave 3 (2010/12) and round 7 (2018/20) of WAS.



Notes: samples (unique couples) derived from waves 3, 5 and round 7 of WAS. $N_{w3} = 460, N_{w5} = 485$ *and* $N_{R7} = 346$. Figures correspond to 2022 prices and weighted estimates.

Gen X (pseudo offspring, born 1973-1979): wealth profile

- Age 30-39 the median level of total net wealth held by high (low) educated couples is approximately £263K (£160K). By age 40-49, the equivalent statistic is £957K (277K).
- Driven by differences in housing (0/1) and pension wealth.
  - Age 40-49: housing wealth among high (medium/low) educated couples £269,491 (£92,000)
  - Age 40-49: pension wealth among high (medium/low) educated couples £342,972 (£76,650)
- Extensive and intensive labour supply margin - trend by education couple type

Inheritances and gift receipt: ages 27-49

Table 10: Inheritance and gifts received by offspring couple type.

Couple type	Wave 1 (2006/08) Age 27-35			Wave 2-3 (2008-2012) Age 30-39		Waves 4-5 (2012-2016) Age 35-44		Round 6-7 (2016-2020) Age 40-49	
	Proportion receive historic inheritance	Proportion receive recent inheritance	Proportion receive recent gift	Proportion receive recent inheritance	Proportion receive recent gift	Proportion receive recent inheritance	Proportion receive recent gift	Proportion receive recent inheritance	Proportion receive recent gift
High educated-High educated	0.12	0.04	0.29	0.20	0.37	0.18	0.27	0.13	0.29
High educated-Medium/Low educated	0.09	0.03	0.30	0.16	0.28	0.16	0.27	0.15	0.17
Medium/Low educated-Medium/Low educated	0.12	0.01	0.17	0.14	0.21	0.09	0.17	0.12	0.09
	Historic inheritances (£)	Recent inheritances (£)	Recent gifts (£)	Recent inheritances (£)	Recent gifts (£)	Recent inheritances (£)	Recent gifts (£)	Recent inheritances	Recent gifts
High educated-High educated	2727	1862	3740	5625	4607	9,812	6,663	11,675	6,092
High educated-Medium/Low educated	2481	1148	2141	2578	4504	8,593	3,727	8,916	3,094
Medium/Low educated-Medium/Low educated	2608	140	930	3684	1275	2,154	2,490	5,364	520
$N_{couples}$	976			345		385		265	

Notes: sample size refers to number unique of couples. Due to the change in the WAS survey period, we account for the overlap between wave 5 and round 6 in our analysis. Figures correspond to weighted estimated and adjusted to 2022 prices.

relatively rly lifecycle receipt.

Collective findings

- Collectively, the findings in parts one and two of the analysis show that the likelihood and level of intergenerational transfers is highly stratified by couple type *both in the pseudo-parent and pseudo-offspring generation*.
  - Given wealth profiles among the boomer cohort and intentions, the exact levels of future transfers will depend on the characteristics of **both sets of parents**.
  - To corroborate findings we utilise the retrospective data on pseudo offspring's parents.

The parents of Gen X

Appendix J: Parental characteristics among individuals within couples aged 29-37 by couple type at wave 2 (2008-2010) of WAS.

Couple level education group	Proportion of fathers with a degree (%)		Proportion of mothers with a degree (%)		Proportion who own their home (%)		Proportion living both first parents (%)	
	Male partner	Female partner	Male partner	Female partner	Male partner	Female partner	Male partner	Female partner
High educated-High educated	0.23	0.23	0.21	0.18	0.91	0.94	0.87	0.93
High educated-Medium/Low educated	0.10	0.10	0.09	0.09	0.87	0.86	0.87	0.78
Medium/Low educated-Medium/Low educated	0.08	0.06	0.02	0.03	0.71	0.69	0.75	0.77
Couple level education group	Proportion of fathers working		Proportion of mothers working		Average number of siblings			
	Male partner	Female partner	Male partner	Female partner	Male partner	Female partner		
High educated-High educated	0.98	0.98	0.74	0.72	1.53	1.66		
High educated-Medium/Low educated	0.97	0.97	0.73	0.73	1.63	1.47		
Medium/Low educated-Medium/Low educated	0.93	0.95	0.60	0.69	1.96	1.74		
$N_{couples}$	578							

Notes: unique couples at wave 2 (2008-10) of WAS where both partners are aged 29-37. Proportions correspond to weighted estimates.

Inheritance expectations: likelihood (couples born 1970-1980)

- Between 3-4X the proportion of highly educated offspring couples respond they 'definitely will' receive some form of inheritance relative to their low educated counterparts.
- In contrast *almost half* of individuals in low educated couples report they do not expect to receive an inheritance.

Inheritance expectations: inheritance net of taxes (couples born 1970-1980)

- Across successively higher educated couples the level of expected inheritance increases, and separately the amounts reported (nominal at the time of their wave 1 survey 2006-8) are similar within couples.
  - Among individuals in high educated couples roughly 1 in 4 (1 in 10) expect to receive between £100,000-£249,000 (£250,000-£499,999).
  - In contrast, the equivalent statistic among medium educated couples is around 1 in 6 (1 in 20)
- And a higher proportion of couples in this group report expecting to receive between £10,000 and £99,999

Future inheritance- crude approximation

Combining information on the magnitude of expected inheritance shares with # siblings among pseudo cohort generation implies:

- The median amount of inheritance an heir (aged 30-39 in 2010-12) with high (low) educated baby boomer parents is expected to receive is £166,000 (£64,500)

- Noting that highly educated offspring couples are also more likely to report both sets of parents being highly educated.

This equates to 63% (41%) of total net wealth among 30-39 y.o. high (low) educated pseudo offspring couples. Noting the absolute median wealth gap between these two groups is over £100,000 (£263,243 versus £155,985).

Conclusions

- Positive sorting is common among both the Boomer and Gen X cohorts- occurring at a rate roughly twice that expected under random matching in some cases.
- High levels of inequality (in absolute terms) in net wealth holdings by couple's education type.
- From an intergenerational perspective, brings together , on average, two sets of parents who have relatively high levels of accumulated wealth.
  - Has important implications for understanding intra and intergenerational wealth inequality, across cohorts and over time.
  - Highlight the role of wider family background characteristics and early life environment i.e., ascribed traits in addition to acquired traits for understanding wealth dynamics.

Conclusions

- Findings suggest that in the case of wealth accumulation the interaction between sorting behaviour and education may not a priori have the same equality-inducing implications as it has done for earnings.
  - Due to the way sorting behaviour interacts with the unique characteristics of wealth.
- Findings suggest intergenerational transfers are unlikely to have mitigated any equalising effects of increasing higher educational attainment for the boomer generation.
- However, the magnitude of current and future intergenerational wealth transfers and increasing heterogeneity in the returns to tertiary level education, suggest:
  - The relative importance of parental wealth will impact policies targeting wealth inequality
  - Social mobility now and & in the future.
  - In particular pension wealth: though we have seen some reform in this area recently.

Limitations: data

- Various issues around underreporting and banded responses at the top of the wealth distribution- WAS in no exception.
- Data do not allow us to identify intended beneficiaries nor inheritance split among potential heirs.
- Cannot verify whether inheritances expected by each individual belonging to a pseudo-offspring couple refers to the same wealth transfer (by not summing such wealth transfers our estimates are likely to be conservative)

Limitations: methods

- Analytical method is descriptive and based on realised outcomes- silent on mechanisms which drive partnership selection.
- Unable to determine whether there has been a change in the level of sorting across the cohorts we study, and the effect of such changes for wealth inequality.
- Do not consider single men and women in our analysis for whom the gains from marriage have changed across cohorts.
- Assume wealth is pooled at the household level, recent empirical evidence suggests intrahousehold wealth inequality by gender is not uncommon in developed countries.
- Sample constraints impede us from analysing wealth outcomes among the same parent-sibling families and accounting for important demographic changes across cohorts.