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Intergenerational transfers and the prospects for increasing wealth inequality ☆

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Abstract

Analyzing two cohorts from the Health and Retirement Survey from 1992 to 2002, we investigate the growth of wealth inequality and the determinants of intergenerational transfers. Although wealth inequality has grown substantially, patterns of intergenerational transfers that we are able to assess have changed only modestly. Based on these results, we conclude that concerns that the level of inequality will continue to increase across its full distribution appear unwarranted. This conclusion, however, is limited in two important respects. First, it is based on a single cohort comparison which, however well-chosen, does not guarantee that other cohort comparisons would yield the same results. Second, the nature of survey research on wealth prevents any incisive analysis of the explosive growth of the wealth holdings of those at the very top of the distribution (i.e., those at the 99th percentile and beyond). Thus, we cannot rule out the possibility that a comparison of those beyond the 99th percentile to everyone else would give evidence that, at this pivot point of the distribution, a new level of self-perpetuation has in fact arrived.

Keywords: Changes in inequality; Wealth; Intergenerational transfers; Racial stratification

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1. Introduction

Wealth inequality in the United States increased substantially in the last two decades of the twentieth century (see Kennickell, 2003; Wolff, 2001). With recognition of the contemporaneous growth of earnings inequality (see Katz and Autor, 1999; Morris and Western, 1999), concerns have arisen that the United States has established a new self-perpetuating equilibrium in which higher levels of inequality will be reproduced over the next several generations (see Neckerman, 2004). Wolff (2002, p. 2) writes:

> Examination of the data on wealth distribution leads to a disturbing question: Is America still the land of opportunity? The growing divergence evident in income distribution is even starker in wealth distribution. Equalizing trends during the 1930s through the 1970s reversed sharply in the 1980s. The gap between the haves and have-nots is greater now—at the start of the twenty-fist century—than at any time since 1929.

Although often unstated, these concerns rest on the plausibility of a straightforward causal narrative: Family resources in childhood determine income and wealth accumulation later in life; an accentuation of resource differentials across families will increase the inequality of attainments among offspring. Although this causal narrative is simplistic, as it ignores the complexity of the intermediate processes involved, it demands evaluation because of the importance of its entailed consequences.

Specific concerns about the racial stratification of wealth are also well developed, with some claims that wealth differences, and the institutional factors that contribute to them (see Oliver and Shapiro, 1995; Shapiro, 2004), are among the most crucial impediments to the elimination of more general racial differences in social standing. The dramatic scale of the differences in the wealth holdings of blacks and whites is now well documented (see Barsky et al., 2002; Blau and Graham, 1990; Keister, 2000). Moreover, these differences failed to close as substantially in the 1980s and 1990s as researchers had expected. And, thus, continuing from the quotation earlier, Wolff (2002, 3) asserts that “the racial distribution of wealth deteriorated in the 1980s and 1990s, from an already unacceptable level.”

Our primary aim in this article, then, is to evaluate the claim that wealth inequality has crossed a threshold above which a new and more extreme self-sustaining structure of inequality has been established. Our secondary aim, given the centrality of racial differences to current discussions of wealth inequality, is to evaluate the consequences of our findings for the future evolution of racial differences in wealth accumulation, especially the historically most important gap between blacks and whites.

As implied by the title of our article, although we will document and carefully analyze the growth of wealth inequality for our respondents, we will focus on one particular causal pathway which is at the frontier of controversies about the evolution of such inequalities—the prevalence and relative impact of intergenerational transfers from parents to children (see Avery and Rendall, 2002; Wilhelm, 2001). In order to engage this theme, we analyze longitudinal data on two cohorts of adults in their late fifties and early sixties who were differentially involved in the expansion of wealth inequality in the 1990s. We then analyze cohort differences in the crucial intergenerational transfers that may be the engine of a new self-sustaining inequality, modeling cohort differences in inter vivos transfers and cohort differences in bequest expectations. With this study design, we bridge the gap in our empirical knowledge between analyses based on repeated cross-sectional data (e.g., Aizcorbe et al., 2003; Wolff, 1998) and longitudinal assessments of single cohorts from earlier time periods (e.g., Conley, 1999, 2001), similar in spirit to the work of Land and Russell (1996) for the evolution of wealth holdings in the 1980s.

As we will discuss at several points in our presentation, our study is limited in scope in two respects that deserve mention at the outset. First, we are only able to assess the consequences of the growth of wealth between the "haves" and "have-nots" (see the Wolff quotation earlier), not the "haves" and "have-lots." In our analysis, we will focus on comparisons of individuals approaching the 90th and 80th percentiles of wealth to those below the median and 20th percentiles of wealth. Thus, we will assess the growing divergence in the wealth holdings of those at the heart of the distribution of wealth, and we then consider the consequences for the future evolution of wealth that these differences may entail.

To some degree, this comparison strategy is sensible; it interfaces well with the burgeoning literature on the consequences of the recent growth of earnings inequality between the upper-middle class and those below them (see Neckerman, 2004). Nonetheless, we have little choice in the matter, as our analysis reflects the constraints of finite samples and survey elicitation of wealth holdings. Like all researchers who analyze survey data on wealth, we have sparse and potentially misleading data on the very heterogeneous wealth holdings of those beyond the 99th percentile. Thus, a useful comparison of the "haves" to the "have-lots" is impossible for us to offer. And, as a result, our conclusions about trends in wealth holdings in general are qualified in the sense that they are not based on a completely informative assessment of the full distribution of wealth.

Second, we cannot offer a complete analysis of all theoretically consequential intergenerational transfers, as no known data source enables simultaneous examination of over-time changes in the effects of investments in the human capital of offspring, inter vivos transfers, and actual bequests on subsequent dynastic success. In fact, for the period we consider and the cohorts we model, a substantial portion of these transfers have not yet occurred. At best, therefore, we can only offer an incomplete evaluation of the conjecture that a new self-perpetuating equilibrium of wealth inequality prevails, which we will qualify in the final section of the article where we present the causal model that we wish we had the data to estimate.

Before proceeding to the results of our empirical analysis, we briefly review the past literature on theoretical models of wealth accumulation, as well as the known empirics of the connections between wealth holdings, intergenerational transfers, and household dynamics. We return to these themes in the concluding section of the article, where we discuss more general issues in the modeling of intergenerational wealth relationships.

1.1. Models of wealth accumulation

Class differences in wealth holdings, especially when conceptualized as differential control of the means of production, were a central interest of classical sociologists. In contrast, modern sociological scholarship on inequality is heavily dominated by labor-market-related investigations of income and occupational attainment.[1] Accordingly, sociology can

[1] Exceptions exist, such as Henretta and Campbell (1978), but these studies emerging from the sociology of aging failed to establish an independent line of scholarship on wealth differences that penetrated into the core of stratification research.

be faulted legitimately for its relative inattention to wealth dynamics and their effects on lifecourse outcomes, as argued by Oliver and Shapiro (1995) and Spilerman (2000).

Economists, in contrast, have a more consistent record of studying wealth accumulation, and it precedes the improvements in data availability that brought sociologists back to the topic. Here, the primary motivation was to develop mechanistic models to study the macro-economic implications of alternative patterns of savings behavior. The life-cycle model of savings and wealth accumulation (see Ando and Modigliani, 1963) explains the distribution of wealth as a function of savings patterns determined by age, expectations of death, and contingent decisions about labor-force participation. Within this model, wealth is created as savings from current income during the work-life, in precisely sufficient amounts to cover all consumption in retirement.

Even with modifications for the uncertainties of life expectancy (see Davies and Shorrocks, 2000), the life-cycle model in its original formulation could not account for the existence of bequests to offspring. And thus, in response, Kotlikoff and Summers (1981), as well as others, proposed that individuals accumulate wealth in order to pass it on to their offspring, above and beyond that which they recognize is necessary to provide a comfortable retirement. Although unsurprising to sociologists aware of the elite studies of family dynasties, these arguments inspired a fascinating economics literature on bequest motives (see Bernheim et al., 1985; Gale and Scholz, 1994; Kotlikoff, 1988; Modigliani, 1988). These researchers sought to determine whether (and to what extent) bequests are altruistic instead of a self-interested strategy by parents to sustain the care and attention of their children. With this new focus, models of wealth accumulation in economics were then opened up to intergenerational dynamics, and inequality scholars in economics moved in to enhance the literature by investigating the relationships between earnings and wealth distributions (see Altonji et al., 1997; Bowles and Gintis, 2002; Danziger et al., 1991; Mulligan, 1997; Rosenzweig and Wolpin, 1993).

Presently, as volumes such as Shapiro and Wolff (2001) demonstrate, sociologists and economists are contributing jointly to the study of evolving wealth differentials. It is now widely acknowledged that the level of wealth inequality observed for any cohort of individuals is a function of intergenerational transfers. In addition to cash inter vivos transfers and bequests, a growing body of work has demonstrated the importance of investments in children by parents and grandparents, bi-directional income-supplementation across generations, and in-kind donation of caregiving and childrearing services that release current income for other purposes. For our analysis, we draw upon the applied demographic literature (see O'Rand and Henretta, 1999 for an overview) that has associated levels and amounts of intergenerational transfers to resource constraints and competing commitments to alternative beneficiaries (see Behrman et al., 1995; McGarry, 1999; Rossi and Rossi, 1990; Soldo and Hill, 1995; Wong et al., 1999). We will establish broader linkages between this literature and the evolution of wealth inequality, similar to Wilhelm (2001).

We will not, however, adopt an explicit mechanistic model of wealth accumulation. Now that the full complexity of wealth accumulation processes is recognized, no finely-specified theoretical model of wealth accumulation, such as the classic life-cycle model of Modigliani, exists that can now be invoked to guide model specifications for empirical analysis (again, see Davies and Shorrocks, 2000). As a result, it remains nearly impossible to evaluate the relative importance of alternative processes, as no common framework exists in which to perform such an evaluation. For example, Oliver and Shapiro (1995) and Shapiro (2004), in their work on the institutionalized barriers to asset accumulation for non-white families, show carefully why stability of racial differences in wealth may remain in spite of the narrowing of educational and income attainment differences. It remains unclear how important these institutional barriers are in comparison to race differences in intergenerational transfers which interact necessarily with the alternative demographic profiles of white and non-white families.

2. Study design

For our empirical analysis, we offer a targeted cohort comparison of the relationships between stocks of wealth, cash transfers from parents to their children, and bequest expectations. Our results are based on data drawn from six waves of the Health and Retirement Study (HRS), 1992 through 2002. These data were designed to enable the analysis of intergenerational transfers (see McGarry, 1999; Soldo and Hill, 1995; Wong et al., 1999) as well as the accumulation of wealth toward the end of the working life (see Venti and Wise, 1998, 2001), and yet they have not been used before (as far as we are aware) to motivate a cohort-based analysis of changes in these relationships.

Our empirical analysis will be divided into two major components: modeling the growth of wealth and then assessing the relationship between wealth and intergenerational transfers. In both portions of our analysis, we will analyze two groups of individuals. The first group represents depression-era babies (born between 1931 and 1933) who survived to 1992, by which time they were between the ages of 59 and 61. The second group represents war-era babies (born between 1939 and 1941) who survived to 2000, by which time they were between the ages of 59 and 61. The selection of these two groups was constrained by the data source. We chose comparable cohorts as far apart as the HRS allowed but that still permitted explicit modeling of the growth of wealth within the younger cohort before a substantial number of workers entered retirement. When drawing conclusions from our analysis, we will discuss the inherent limitations of this two-cohort comparison.

We will focus on the wealth to which individuals have access, explicitly modeling household structure as advocated by Burkhauser and Weathers (2001). Thus, although we will treat wealth as a household-level characteristic, we will analyze it as if it is an individual-level resource. Accordingly, we will consider household structure when modeling cohort change, so that the greater average wealth of coupled households is explicitly revealed (where coupled households are comprised of two adults who are married, partnered, or cohabiting). At the same time, we will parameterize race differences in the models, as patterns of household structure differ substantially by race.

2.1. Analysis sample and estimation strategy

We analyze the portion of the HRS that is a nationally representative sample of 12,652 respondents aged 51–61 in 1992 along with their spouses or partners. Our analysis is based on the RAND HRS data (see http://www.rand.org/labor/aging/dataprod/#randhrs), which we supplemented with a limited number of variables drawn from the original HRS data files.[2] Beyond what we detail in this section, information on how the data were coded for

[2] We excluded 109 observations that overlap with the AHEAD survey because the RAND files code these observations according to the AHEAD identification coding scheme.

subsequent analysis is provided in a supplementary appendix (which is available by request and is posted on the website of the first author as Appendix S). Also, as we will describe in detail in the results section on intergenerational transfers, some crucial changes in question wording for both inter vivos transfers and bequest probabilities are present between 1992 and 2000. Our solutions to these changes are explained briefly in the main text, but additional detail and alternative results under different assumptions are reported in detail in the supplementary Appendix S.

For the depression-era babies, 2320 respondents were present in the HRS sample for the baseline 1992 survey. For the war-era babies, 2869 respondents were present in the HRS sample for the baseline 1992 survey. By 2000, however, only 2216 of these 2869 respondents remained in the sample. Accordingly, in order to obtain population estimates for the war-era babies as of 2000, one must re-weight the 2000 HRS data to account for non-random patterns of attrition between 1992 and 2000. Of those respondents who were no longer in the sample by 2000, 474 (or 16.52%) were missing from the sample. Because these individuals were not lost to the sample at random, we will re-weight the data to adjust for non-random sample attrition. But it is also the case that 179 respondents (or 6.24% of the baseline sample) were known to have died between 1992 and 2000. We will not adjust for known deaths, for the reasons specified later.

Table 1 presents results from a multinomial logit predicting sample status in 2000 for the younger war-era cohort. The reference category is “present in the 2000 wave” and the model then predicts the relative probability of “missing from the HRS sample” and “known to be dead.” Self-reported health status in 1992 strongly predicts sample attrition, especially known deaths. To a lesser extent, socio-economic status and race also predict sample attrition, albeit somewhat differentially across the two destinations.

Our adjustment procedure first extracts selected odds from the results in Table 1. For all respondents observed in 2000, we assign to each individual the predicted probability from Table 1 of being in the state “missing” rather than present in the sample. Then, we divided each of these probabilities by its complement, forming the odds of leaving the sample instead of remaining in the sample. With this procedure, we therefore ignore the logit coefficients in the “dead” column from Table 1, basing our adjustment only on the odds of leaving the sample relative to staying in the sample. Finally, we then multiplied the predicted odds by the HRS sampling weight. The resulting weight adjusts for both the non-random nature of the original sample and then for the differential probability of non-death-induced attrition. When using this two-part weight in subsequent analysis, we label all corresponding results “attrition-reweighted.”

Why did we not adjust for patterns of death between 1992 and 2000 for the younger cohort? Members of the older cohort who died between the ages of 51–53 and 59–61 are not present in the 1992 baseline HRS sample. Thus, to construct a valid comparison of 59–61 year-olds between 1992 and 2000, one should not adjust for death patterns.

Although our adjustment procedure is consistent with the general method for constructing panel weights in longitudinal surveys (and also has direct connections to both table-standardization procedures in demography and propensity score weighting procedures from statistics), there are sources of unavoidable bias in our adjustment procedure. And, although both of the following biases are countervailing, it seems unlikely that they completely negate each other. First, some of the respondents who were missing from the sample in 2000 were also likely dead but not known to be so. If death were independent of non-death-induced attrition, then we could conclude that 7.47% (i.e., 179/[179 + 2216]) of the

Table 1
Multinomial logit coefficients for the effects of 1992 baseline characteristics on sample status by 2000

	Missing		Dead	
	Coef.	SE	Coef.	SE
Intercept	−.316	.378	−2.967	.618
Black	.235	.165	−.045	.243
Other race	.437	.255	.241	.442
Female	−.054	.114	−.681	.186
Northeast	−.255	.151	−.118	.235
Midwest	−.132	.135	−.083	.213
West	−.137	.155	−.528	.268
Single	.092	.281	−.037	.463
Partnered	−.005	.340	.266	.435
Divorced	.398	.296	.431	.478
Widowed	.199	.379	.161	.596
Number of children living	−.130	.031	−.008	.045
Number of parents living	−.236	.079	−.021	.123
Father's education	−.004	.020	−.048	.032
Mother's education	.047	.022	.082	.036
Health excellent	−.141	.147	−.811	.301
Health very good	−.115	.139	−.247	.247
Health fair	−.088	.192	.843	.257
Health poor	−.349	.298	1.358	.299
Years of education	−.087	.023	.024	.035
Works part time	−.101	.181	.449	.288
Partly retired	−.066	.372	−.328	.669
Retired	−.019	.238	.924	.270
Unemployed	.211	.308	.520	.458
Not in labor force	−.120	.193	−.149	.372
Disabled	−.493	.348	.405	.338
Household income (000s)	.000	.001	−.002	.002
Pseudo R^2	0.06			
N	2,869			

Notes: The reference category for the logit is "present in the 2000 wave."
Source: HRS, 1992–2000.

474 respondents who were missing from the HRS were likely dead. Thus, in treating about 35 or more respondents as missing when they were probably genuinely dead, our adjustment procedure slightly over-adjusts for non-death-induced sample attrition.[3]

Second, because of improvements in health, it seems that some additional non-trivial proportion of depression-era babies would have lived to the 59 to 61 year-old age range, if they had instead been born eight years later. Thus, it seems reasonable that the younger cohort aged 59–61 in 2000 may contain some individuals with relatively low levels of

[3] The death rate is almost certainly higher than 35 out of 474. The HRS data collectors labeled 318 of these missing cases "presumed alive" because some contact with the respondent was achieved in 2000 (even though the respondents refused to participate). That left 156 non-respondents for whom it is unknown whether they were dead or alive in 2000. As many as 156 of the 474 missing respondents were genuinely dead, and we have little reason to privilege any particular number, even though we suspect that 35 is too low.

wealth and other socio-economic status characteristics who would not have survived to the age bracket of 59–61 if they had been born in the depression era.

Comparing these two offsetting biases, it seems likely that the "dead but only known to be missing" respondents would outnumber the "alive but would have been dead if born earlier." If so, then our adjustment may over-compensate for non-death-induced attrition, thereby minimizing rather than accentuating cohort differences. We will discuss these potential biases in the concluding section of the article.

3. Results of empirical analysis

3.1. Growth of wealth and income between 1992 and 2000 for those aged 51 to 53 in 1992

Table 2 presents changes in household wealth and income between 1992 and 2000 for the younger cohort. The first panel presents 1992 wealth (in inflation-adjusted 2000 dollars) for all HRS respondents between the ages of 51 and 53.[4] The mean total net wealth for these respondents was $225,596, which is then broken down into net financial wealth (which has a mean of $42,558), wealth in individual retirement accounts (which has a mean of $27,527), wealth as net equity in a primary residence (which has a mean of $65,710), and finally total other wealth (which has a mean of $89,801). This last component of wealth is disproportionately large, as it is composed primarily of wealth in vehicles and other types of property. As we will describe later, it also includes assets in a business, which creates a large mean value for the sample because of a few respondents who have large amounts of business assets. In the last three rows of Table 2, a similar tabulation of household income is offered, which is then broken down into income from wages and salaries and all other sources of income.

In the second panel of Table 2, the means and standard deviations of each of these components of household wealth and income is then calculated for the subset of 51 to 53 year-olds who were among the 2208 respondents who were still living and still in the HRS sample in 2000, reweighted to adjust for attrition patterns using the results reporter earlier in Table 1. For all six components of household wealth and income, the means (as well as the associated standard deviations) are larger than those for all 51 to 53 year-olds in the HRS in 1992 (but smaller than they would have been for this group of 2208 respondents in the absence of the attrition adjustment).[5]

In the third panel, the same wealth and income measures are then calculated for the same group of respondents in 2000, reweighted to adjust for attrition. Then, in the last column of the table, the percentage growth in wealth and income between 1992 and 2000 is calculated for this age group, after attrition adjustments. Total net wealth increased for these respondents by 73.5% between 1992 and 2000. Growth was somewhat more pronounced for net financial wealth, and especially robust for wealth stored in retirement plans (which includes both IRAs and funds in accounts for defined contribution pension plans).

[4] Nominal 1992 dollars were divided by 85.824 to generate real 2000 dollars, where the multiplier is based on the Personal Consumption Expenditures Deflator of the Bureau of Economic Analysis, U.S. Department of Commerce.

[5] For example, without our attrition adjustment, the total net wealth of 51 to 53 year-olds in 1992 was 241,265 dollars among the 2,216 respondents who were present in 2000.

Table 2
Growth in household wealth and income for those aged 51–53 in 1992 and 59–61 in 2000

	Wealth and income in 1992 for all 51 to 53 year-olds			Attrition-reweighted wealth and income in 1992 for 51 to 53 year-olds who were in the sample as 59–61 year-olds in 2000			Attrition-reweighted wealth and income for 59 to 61 year-olds in 2000			Attrition-reweighted percentage growth between 1992 and 2000
	N	Mean	SD	*N*	Mean	SD	*N*	Mean	SD	
Total net wealth	2869	225,596	524,589	2208	257,917	635,259	2208	447,573	1,978,123	73.5
Net financial wealth	2869	42,558	177,477	2208	50,950	193,468	2208	116,992	896,326	129.6
Retirement plan wealth	2869	27,527	77,364	2208	32,598	86,706	2208	85,856	233,519	163.4
Net housing wealth	2869	65,710	90,506	2208	72,801	97,925	2208	119,336	567,168	63.9
Total other wealth	2869	89,801	372,889	2208	101,568	437,072	2208	125,389	792,323	23.5
Total household income	2869	58,221	57,666	2208	61,581	61,593	2208	68,199	156,238	10.7
Total household earnings	2869	47,479	48,388	2208	49,209	49,237	2208	35,061	65,444	−28.8
Total non-wage income	2869	10,742	31,008	2208	12,372	35,586	2208	33,138	108,928	167.8

Notes: All dollar values have been converted to 2000 dollars using the Personal Consumption Expenditures Deflator.
Source: HRS, 1992–2000.

Total household income increased modestly, but this growth reflects a decline in household earnings and a large increase in the amount of other income. In part, the latter determines the former. As income from investments increases, individuals are more likely to withdraw from the labor force.

To place these estimates of the percentage growth of the wealth of HRS respondents in context, consider the following indices of investment returns. The Dow Jones Industrial Average of stock values increased by 149.5% in inflation-adjusted dollars between 1992 and 2000 (from 4323.6 in 1992 to 10,787.6 in 2000). Over the same time period, the House Price Index increased by 10.7% in inflation-adjusted dollars (from 227.9 in 1992 to 252.3 in 2000) while private retirement plan assets of all types increased by 72.2% in inflation-adjusted dollars (from 2,439,978 in 1992; 4,202,672 in 2000).[6] The exact correspondence between these growth rates and the wealth of HRS respondents is unknowable, as we cannot model savings rates from earnings and investment portfolio rebalancing (e.g., selling stock to buy real estate). But clearly this group of HRS respondents benefited from the favorable investment conditions that unfolded in the 1990s.

3.2. Cohort differences in wealth for those between the ages of 59 and 61 in 1992 and 2000

Did the growth in wealth just documented for the younger cohort result in a stock of wealth greater than comparable cohorts in earlier years? To answer this question, we compare the two selected cohorts from the HRS. For HRS respondents aged 59–61 in 1992, the mean level of total net wealth was equal to $365,471, and the standard deviation of total net wealth was equal to $691,727. These numbers are directly comparable to the attrition-reweighted results for wealth in 2000 presented in Table 2, where 59 to 61 year-old HRS respondents in 2000 had a mean level of total net wealth equal to $447,573, along within an associated standard deviation of $1,978,123. This comparison shows that the average level of wealth grew by 22.5% between the two cohorts, and the dispersion of wealth, as measured by the standard deviation, increased by 286%. Although we know from other research that wealth grew substantially in the 1990s, the increase in the dispersion of wealth suggested by the HRS data seems excessive. Inspection of the data does reveal some extreme values, which have exerted substantial influence on these dispersion results, and to a lesser extent on the average growth of wealth.[7]

[6] The House Price Index is calculated by the Office of Federal Housing Enterprise Oversight (see www.ofheo.gov), and the pension plan increase was taken from the 1999 and 2000 Private Pension Plan Bulletin of the U.S. Department of Labor (see http://www.dol.gov/ebsa/). The specific numbers cited in the main text do not necessarily correspond to the same exact window of growth observed for the HRS respondents (because each of these three indices fluctuates within 1992 and 2000 and we made no attempt to match these fluctuations to the data collection days of the HRS).

[7] For example, the top 25 values of total net wealth for the older cohort increase gradually and steadily from 2.82 million to 8.09 million dollars. The top 25 values of wealth for the younger cohort increase more dramatically and less smoothly. For the 25th through the 6th highest values, wealth increases somewhat steadily from 3.5 million to 7.97 million dollars. However, the five wealthiest individuals have wealth equal to of 10.8, 26.1, 26.1, 40.1 and 54.3 million dollars. Since research has shown that there has indeed been explosive growth of wealth at the very top of the wealth distribution, these values may be valid. And yet, they nonetheless may exert too much specific leverage on the results that we report.

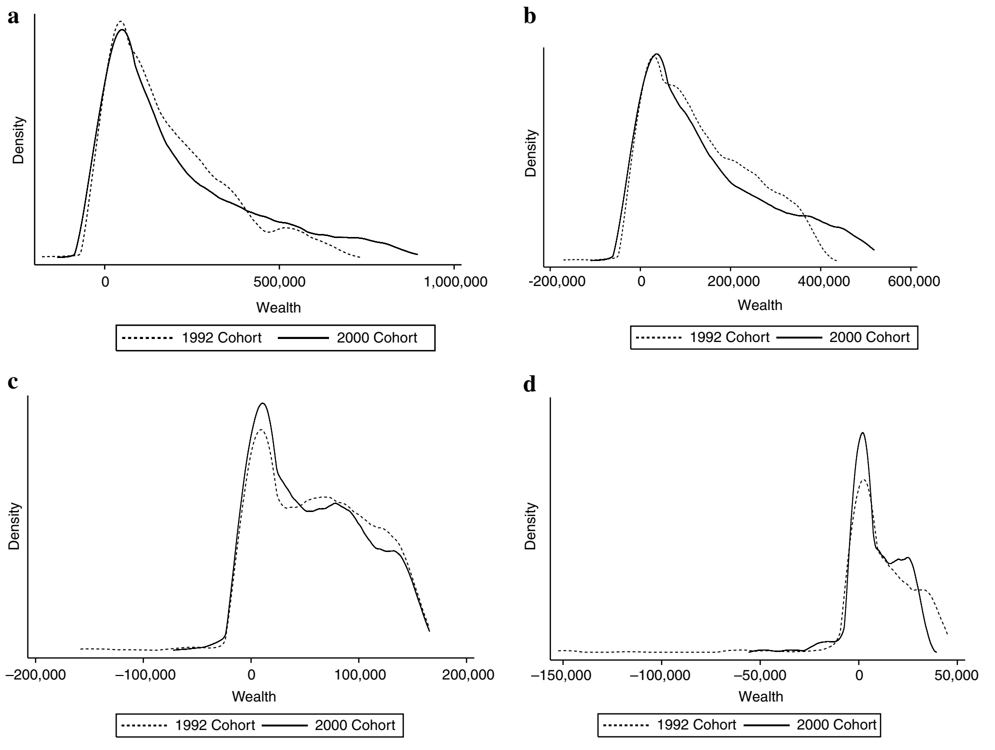

Fig. 1. Kernel density estimates of the distribution of total wealth for two cohorts of individuals between the ages of 59 and 61, estimated for the minimum wealth reported through (a) the 90th percentile of wealth reported for each cohort, (b) the 80th percentile of wealth reported for each cohort, (c) the median of wealth reported for each cohort, and (d) the 20th percentile of wealth reported for each cohort.

To begin to assess more carefully the degree of between-cohort differences in wealth, Fig. 1a–d present four separate kernel density estimates of the distribution of wealth. These figures can be interpreted as smoothed histograms, where the intervals of the histogram overlap and individuals in the center of each interval are given more weight than those at the edges.[8] The four figures differ in the degree to which the within-cohort right tails of the distributions are ignored. For Fig. 1a, the density estimates are calculated for the minimum value of wealth up to the 90th percentile of reported wealth for each cohort. In Fig. 1b–d, the upper bound of the estimated probability density is set at the 80th percentile, the median, and the 20th percentile of each within-cohort distribution of wealth.

For Fig. 1a, the 90th percentile extends farther to the right for the younger cohort in 2000 than for the older cohort in 1992. Accordingly, the density is shifted out of the center of the distribution to its right tail. A similar pattern is shown for the 80th percentile, as revealed in Fig. 1b. In contrast, Fig. 1c and Fig. 1d show that cohort differences around the

[8] We used the default settings for STATA’s kdensity routine (an Epanechnikov kernel with automatic bandwidth selection).

median and at the bottom of the distribution are less substantial. Moreover, the 20th percentile of the older cohort is higher than the 20th percentile of the younger cohort.[9]

Comparing results across the four figures, it is clear that, even ignoring the top 10% of wealth in each cohort, there has been an increase in the inequality of wealth. Thus, even though a comparison of the standard deviation of total net wealth between cohorts may over-estimate the growth of wealth inequality because of some extreme values, a substantial trend is evident when these extreme values are ignored. For the younger cohort, HRS respondents between the median and the 90th percentile of wealth distanced themselves from those in the bottom half of the wealth distribution.

To model this growth of wealth more completely, and to consider the degree to which household structure determines wealth (both substantively and as a matter of aggregation), we offer additional analysis of the growth of wealth in an appendix (which is available by request and is posted on the website of the first author as Appendix A). Following pooled OLS models for a cohort comparison of wealth in 1992 and 2000, we then estimate a set of quantile regression models for Appendix A. Corresponding to Fig. 1a–d, we predicted the 90th percentile, the 80th percentile, the median, and the 20th percentile of total net wealth, using race, household structure, earnings, and retirement plan as predictors. There, we show, for example, that the 90th percentile in 1992 of the total net wealth of whites living in coupled households was $788,831, but the 90th percentile of comparable respondents in the younger cohort in 2000 was higher by $327,169 for a value of $1,116,000. We then offer race and household-structure-specific estimates of these quantiles, showing for example that black respondents had substantially lower 90th percentiles of wealth, both for those living in coupled and single households, and the corresponding cohort increase in wealth was lower. For example, the 90th percentile among blacks living in coupled households in the older cohort was $240,609 while the 90th percentile among corresponding blacks in the younger cohort was $415,001.

In subsequent analysis for Appendix A, we then repeated the quantile regression models for the 80th percentile, the median, and the 20th percentile. The quantile regressions for the 80th percentile generally showed the same pattern as those for the 90th percentile, but with levels of wealth correspondingly smaller. The quantile regressions for the median show a much less substantial cohort increase in wealth at the middle of the distribution. The quantile regressions for the 20th percentile reveal an even less consequential growth in wealth at the bottom of the distribution of wealth (and it appears that a decline in wealth is present for individuals in coupled households). In general, the results show that wealth has increased between the cohorts, such that the younger cohort has more wealth on average than the older cohort. But, as shown earlier in Fig. 1a–d, the growth in wealth is uneven, with the right tail of the distribution accumulating a disproportionate share of wealth.

We also offer a careful inspection of the race differences for these other quantiles in Appendix A. The median white respondent in a coupled household in 1992 had net

[9] The differences that do exist for Fig. 1c and Fig. 1d may well differ depending on whether our adjustment for inflation is fair, since the cohort densities are nearly of the same shape (in contrast to the difference shown in Fig. 1a and b), suggesting that some of the differences can be captured by shifts in the scale rather than meaningful distributional shifts. That being said, there does appear to be a greater tendency for members of the younger cohort to have values of zero wealth rather than small negative and positive wealth.

wealth holdings equal to \$214,392. By 2000, a comparable respondent had wealth of \$241,700, which represents an increase of 12.7%. In comparison, the median black respondent in a coupled household in 1992 had wealth of only \$75,736, which declined between cohorts by 4.1% to \$72,600. It is these sorts of comparisons that have led others (see citations in the introduction) to note that the generalized growth of wealth has accentuated the racial stratification of the wealth distribution; not only does the right tail of the distribution among whites outpace that among blacks, in our cohort comparison the median black household is losing ground to the median white household.

3.3. The perpetuation of inequality of wealth and patterns of intergenerational transfers

How do patterns of intergenerational transfers respond to changes in the level of wealth inequality? When inequality of wealth increases, do inter vivos transfers from parents to their children increase at the top of the wealth distribution? Do inter vivos transfers, under the same conditions, also decline at the bottom of the wealth distribution? If so, how much does the dispersion of inter vivos transfers increase, and what are the consequences of such an increased dispersion for end-of-life bequests?

When considering these connections between wealth inequality and intergenerational transfers, race-related questions arise immediately as well. Are there black-white differences in the relationship between transfers and savings behavior? To what extent are black-white differences exacerbated by differences in fertility rates, single parenthood, and patterns of divorce and separation?

We cannot answer all variants of these sorts of questions, especially the race-related questions, because the HRS data are neither rich enough nor the sample sizes of the two cohorts large enough. But, we can estimate, as reported in Tables 3–5: (1) patterns in the average amount of inter vivos transfers in 1992 and 2000 for differentially wealthy HRS respondents in the two cohorts, (2) the total amount of transfers between 1992 and 2000 for the younger cohort for which inequality of wealth is larger, and (3) cohort differences in the self-reported probability of leaving behind a bequest of \$100,000 or more. In this section, we report these results and offer straightforward interpretations. In the discussion section of the article, we then consider their implications more broadly, considering the particular patterns in the context of a causal model of intergenerational wealth relationships.

3.3.1. Cohort differences in the pattern of inver vivos transfers

For the results presented in Tables 3 and 4, we analyzed patterns of inter vivos transfers between HRS respondents and their children. In both 1992 and 2000, HRS respondents were asked to indicate how much financial assistance they provided to their children. In 1992, the survey instrument inquired:

> Not counting any shared housing or shared food, have you [and your (husband/partner)] given (your child/any of your children) financial assistance totaling \$500 or more in the past 12 months? By financial assistance we mean giving money, helping pay bills, or covering specific types of costs such as those for medical care or insurance, schooling, down payment for a home, rent, etc. The financial assistance can be considered support, a gift or a loan.

Table 3
Attrition-reweighted regression models predicting amount respondents provided in financial assistance to children in the past two years, by cohort

	Older cohort 59 to 61 year-olds in 1992				Younger cohort 59 to 61 year-olds in 2000			
	Model 1		Model 2		Model 1		Model 2	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	3678	435	2787	464	3233	330	2442	406
White male in single household	3162	2439	2010	2336	−986	773	1197	1917
White female in single household	1733	1003	3169	1565	−1698	514	1033	1349
Black in coupled household	−1565	613	−416	495	−1685	447	−456	385
Black male single household	−1394	748	−283	2621	−2336	575	882	1855
Black female single household	−1699	611	1573	1459	−2698	381	311	1098
Other race in coupled household	−978	1133	−436	947	332	1804	1119	1773
Other race single male household	−1782	1572	561	2504	2729	2953	5694	3094
Other race in single female H'hold	−2391	789	147	1429	−2455	723	515	1399
Wealth >80th percentile			3306	1348			4345	1101
× In single male household			29,934	18,454			−5911	2318
× In single female household			7170	7076			−5067	1935
Wealth >60th and <80th percentiles			434	718			−385	497
× In single male household			−517	2907			928	3127
× In single female household			−1625	2020			−2320	1371
Wealth >20th and <40th percentiles			−650	559			−1063	480
× In single male household			946	2979			−1409	1968
× In single female household			−1100	1671			−1361	1326
Wealth <20th percentile			−1174	552			−1430	628
× In single male household			−1343	2344			−1613	1957
× In single female household			−2087	1548			−1571	1354
R^2	0.001		.049		0.011		.057	
N	2,031		2,031		2,175		2,175	

Notes: Standard errors are robust Taylor series standard errors, further adjusted for clustering within households.
Source: HRS, 1992–2002.

If respondents answered “Yes,” they were given the follow-up question: “About how much money did that assistance amount to altogether in the past 12 months?”

In 2000, respondents were asked a slightly different set of questions, beginning with:

> Including help with education but not shared housing or shared food or any deed to a house, (since previous wave interview/in the last two years) did you (or your (late) husband/wife/partner) give financial help totaling $500 or more to any of your children (or grandchildren)? By financial help we mean giving money, helping pay bills, or covering specific types of costs such as those for medical care or insurance, schooling, down payment for a home, rent, etc. The financial help can be considered support, a gift or a loan.

If respondents answered “Yes,” they were given the follow-up question: “About how much did that amount to for each child (since previous wave interview/in the last two years)?”

The substance tapped by these questions is the same in both survey years, but the question wording is substantially different. In 1992, respondents were asked about transfers in the past 12 months, whereas in 2000 they were asked about transfers in the past 2 years. In addition, in 1992 respondents were asked to sum the transfers to all children, whereas in 2000 they were asked to provide transfer amounts for each child.

As described in Appendix S, we explored a variety of transformations that would allow us to estimate combined-cohort models that would enable formal tests of between-cohort differences. Although we were able to resolve satisfactorily a number complications (such as standardizing the left-censoring across cohorts, as well as differences for non-resident children), we determined that formal dollar-for-dollar tests of between-cohort differences were impossible because of the 12-month versus 2-year recall period for the 1992 and 2000 data. Accordingly, in Table 3, we present models separately for the two cohorts, and we build between-cohort interpretations based mostly on within-cohort ratio differences in the average amount of inter vivos transfers between different types of respondents. However, in order to put the models on a somewhat equivalent scale, we multiplied the 1992 transfer responses for the older cohort by 2 in order to adjust for how the recall window increased from 12 to 24 months between 1992 and 2000.[10]

For the first panel of Table 3, two models of inter vivos transfers are offered for the older cohort. For model 1, the intercept of 3678 suggests that whites in coupled households transferred on average $3,678 to their children in 1991 and 1992. But, note the question wording above that generated a left-censored dependent variable. The value of $3,678 is therefore the average transfer amount assuming that those who transferred less than the cutoff value of $500 a year had in fact transferred zero dollars in each year. Since this is an unreasonable assumption, the mean value among coupled households suggested by the intercept of this model is lower than it would have been if we had the true value of transfers among those who transferred more than zero dollars but less than the cutoff value of $1000 (i.e., twice the yearly cutoff value of $500).

For this particular amount of average transfer, consider the following calculation. Since the model is a two-year aggregation, the distribution of reported transfers falls from 1000 to 0 dollars. In particular, 26.5% of whites living in coupled households reported transfers of $1000 or greater, and the complement of 73.5% of these respondents had 0 for their recorded transfers. If we make the extreme assumption that each of those with a recorded value of 0 for the transfers had actually transferred 999 dollars, and, as a result, the left-censoring was maximally misleading for all of these respondents, then the average transfer amount among whites living in coupled households would have been $4412 rather than $3678.[11] Thus, we know from this analysis that the true average amount of transfers for whites in coupled households falls within an interval (subject to sampling error) that is bounded by $3678 and $4412. We will offer calculations of bounds such as these in the

[10] An inspection of the two sets of models in Table 3 may suggest that this is an over-adjustment and thus that the 24-month recall period in 2000 was "shorter" than twice the 12-month recall period in 1992. This might explain the consistent decline in the amount of transfers for those below the 80th percentile that is implied by the two sets of models. If so, this possibility may suggest that the younger cohort may have transferred more on average in comparison to the older cohort than is suggested by these models. Any such over-adjustment created by the multiplication by 2 of the 1992 transfers does not, however, affect the ratio-based interpretations that we emphasize in the main text.

[11] In particular, the average transfers would have been $.735(999) + .265(13{,}879) = 4412$ rather than $.735(0) + .265(13{,}879) = 3678$.

course of presenting the results, especially in cases where they qualify our primary interpretations.

Returning to model 1 in Table 3, the coefficient of −1565 for blacks in coupled households suggests that black HRS respondents in the older cohort transferred only $2113. Thus, assuming that the left-censoring downward bias is not race-specific, whites in coupled households transferred 74% more money than blacks in coupled households (i.e., 1565/[3678–1565]). The coefficient of −978 for other-race respondents in the older cohort suggests that whites in coupled households transferred 36% more money than other-race respondents in coupled households (i.e., 978/[3678–978]).[12]

The second panel of Table 3 presents analogous results for the younger and more unequal cohort. The gross sizes of the inter vivos transfers appear to remain quite modest, averaging only $3233 dollars for white respondents in coupled households over the two prior years. As discussed for the older cohort, this average is depressed artificially by the left-censoring of the data, but the overall average could not have been greater than $4046 dollars under the most extreme assumption that all 69.8% of respondents with reported values of 0 for their transfers had actually transferred the maximum amount that was still consistent with the censoring.[13] Because of the recall window issue noted earlier, we caution against rigid comparisons of these sorts of averages to the corresponding amounts for model 1 for the older cohort. Nonetheless, the modest size of the transfers is notable for both cohorts, even when making extreme assumptions about the size of the left-censoring bias.

Ratios of race-differences between the two cohorts, however, are more easily justified, and here there are some differences. The results in the second panel show black-white differences in transfers for those in coupled households may have increased. As noted earlier, for the older cohort, whites transferred 74% more than blacks. For the younger cohort, this number increased to 111% (i.e., 1698/[3233–1698]). This change conforms to our expectations, based on the literature on transfers and wealth. But the standard errors of the ingredients of this ratio are relatively large, and thus one cannot reject the statistical null hypothesis of constant black–white differences. Other-race respondents living in coupled households appeared to transfer amounts equivalent to whites in coupled households, which differs substantially from the younger cohort. But here again the standard errors are quite large, and the other-race category changed in composition relatively more than other groups between the two cohorts.

In general, these baseline results suggest that the gross sizes of inter vivos transfers are quite modest for both cohorts. Even so, a substantial gap in the transfer amounts for

[12] We separate out those living in single households primarily so that we can estimate the effects for those in coupled households more precisely. The patterns for those living in single households are erratic, and thus we focus accordingly on the patterns for those living in coupled households in the text. Aside from the small sample sizes for those in single households, the patterns are likely more heterogeneous and therefore hard to explain. Some heterogeneity may be due to variability in childbearing, such as child support payments (which we assume from the question wording would be included in the reported transfer payments). We are able to interpret the household differences for the total transfers later.

[13] For the 2000 cohort, that value is $1165 rather than $999, as we had to standardize the left-censoring across cohorts to remove the effects of inflation on the censoring. As described in the supplementary appendix, before estimating the models in Table 3, we imposed a value of 0 on those who reported between $1000 and $1165 in transfers for the 2000 HRS questionnaire.

whites and blacks remains for both cohorts, and it may have increased for the younger and more unequal cohort.

Model 2 in Table 3 addresses the most important question of our analysis in this section: Did the relatively wealthy HRS respondents in the younger 2000 cohort transfer relatively more in comparison to the less wealthy than was the case for a similar comparison for the older cohort in 1992? To assess this possibility, we coded wealth separately into quintiles by cohort, so that we could compare distributional effects on transfer amounts. We know from Fig. 1a and b (and, more specifically, from the results in Appendix A) that, for example, those in the top quintile (above the 80th percentile) in the older 1992 cohort were not as wealthy in comparison to other quintiles of wealth as those in the top quintile in the younger cohort in 2000. Thus, by including dummy variables for the top two quintiles and the bottom two quintiles in model 2 in Table 3, separately for each cohort in each panel, we can assess differences in transfer amounts from those in the middle quintile in each cohort.

For example, model 2 in the first panel shows that those in the top quintile of wealth transferred 119% more wealth in 1991 and 1992 than those in the middle quintile (i.e., $2787 + 3306 = 6093$ versus 2787). Those in the middle quintile transferred 73% more wealth than those in the bottom quintile (i.e., 2787 versus $2787–1174 = 1613$). For the younger 2000 cohort, these differences were larger, with the top quintile transferring 178% more wealth than the middle quintile (i.e., $2442 + 4345 = 6787$ versus 2442) and the middle quintile transferring 141% more wealth than the bottom quintile (i.e., 2442 versus $2442–1430 = 1012$). The patterns for the second and fourth quintiles of both cohorts are less clear. However, the general result of model 2 for both cohorts is clear: the increase in wealth inequality is associated with a modest increase the inequality of inter vivos across quintiles of the wealth distribution.

But, was the increase large enough to set off a future further divergence of wealth between the "haves" and "have-nots"? We assess this possibility by looking at the total amount transferred by the younger and more unequal cohort between 1991 and 2000, based on the 1992, 1994, 1996, 1998, and 2000 HRS waves. Although there is still some inconsistency in the question wording across years, and although there is a left-censoring problem in each of the underlying years for which transfers were reported, the total transfer dependent variable implicitly smooths year-by-year variation as could be produced either by random variation in the needs of children or the capacities of parents. We use the same specifications from Table 3, and thus we predict transfers over the prior 10 years by wealth in 2000.[14]

Model 1 in Table 4 shows that whites living in coupled households transferred on average $22,739 to their children between 1991 and 2000. Again, the true value is larger because of the left-censoring in each of the HRS waves. Our calculations suggest that the transfer amount could not have been larger than $26,456, assuming those below the 500-dollar-a-year threshold contributed 499 dollars.[15] Blacks in coupled household transferred, on average, 7,604 dollars less.[16] Assuming the left-censoring bias is not race-specific, white HRS respondents in

[14] The wealth variable in 2000 is therefore endogenous, but only modestly so given the modesty of the inter vivos transfers. Also, the endogeneity provides no particular problems for our interpretations, since we merely seek to describe whether or not the relatively wealthy in 2000 had, nonetheless, still transferred more money in the prior decade.

[15] Our calculation here is: $.698(5325) + .302(75295) = 26456$ rather than $.698(0) + .302(75295) = 22739$.

[16] The point-estimate for other-race respondents is 960 dollars, but with such an unusually large standard error of 6,257 we refrain from interpreting this estimate.

Table 4
Attrition-reweighted regression models for total transfers between 1991 and 1999 to children for respondents aged 59–61 in 2000

	Younger cohort 59 to 61 year-olds in 2000			
	Model 1		Model 2	
	Coef.	SE	Coef.	SE
Intercept	22,739	1325	15,260	1448
White male in single household	−6981	3152	5939	5714
White female in single household	−7344	2026	5045	3130
Black in coupled household	−7604	2748	−251	2633
Black male single household	735	6293	18,435	9502
Black female single household	−11,801	1877	1948	3278
Other race in coupled household	960	6257	5985	5928
Other race single male household	−1877	3809	17,344	6482
Other race in single female H'hold	−8566	5251	4709	6752
Wealth >80th percentile			24288	3996
× In single male household			−28,455	8317
× In single female household			−25,387	6667
Wealth >60th and <80th percentiles			7151	2598
× In single male household			−3229	11,761
× In single female household			−11,889	5403
Wealth >20th and <40th percentiles			−3190	1877
× In single male household			−2432	8421
× In single female household			−823	4498
Wealth <20th percentile			−6244	2094
× In single male household			−10,260	6491
× In single female household			−4146	3665
R^2	.010		.077	
N	2003		2003	

Notes: See prior table.
Source: HRS, 1992–2002.

coupled households therefore transferred 50% more than black HRS respondents in coupled households (i.e., 7604/[22,739–7604]). This ratio differs substantially from the ratio suggested in Table 3, where whites contributed 74 and 111% more based only upon transfers that occurred in the two-years before the cohorts reached their maximum ages in our comparison. This result suggests that black-white differences in transfer amounts grow as parents age (but, again, this difference could merely reflect sampling variation).

The decade-long transfer variable for Table 4 allows for more straightforward comparisons for those in single households than for the results in Table 3. Whites and other-race respondents in single households transferred considerably less. For blacks, females in single households transferred the lowest amounts of any group of respondents, but black males in single households contributed as much as white respondents in single households.[17]

[17] Since the standard error of the coefficient for black males in single households is large, we cannot be confident that these relatively high levels of reported transfers are representative of the referent population. In fact, there are only 43 black males in the younger cohort living in single households.

In spite of the difficulty of assessing the consequences of household structure for black-white differences, it is clear that black respondents in coupled households transferred considerably less money to their children than white respondents in coupled households. For the HRS data, blacks and whites in coupled households had similarly high propensities to have children. And, we calculated that whites in coupled households who had children had on average 3.15 children whereas blacks in coupled households who had children had on average 3.68 children. Using these numbers for our two cohorts, we estimated that each child of a white HRS respondent living in a coupled household received, on average, 77% more money in inter vivos transfers between 1991 and 2000 in comparison to a black HRS respondent living in a coupled household (i.e., 22,739/3.12 = 7288 versus [22,739–7604]/3.68 = 4113).

Although these basic group differences in total transfers are important, especially in reinforcing the pervasiveness of race differences in wealth accumulation, our primary interest at this point remains the relationship between wealth and transfers. Accordingly, model 2 predicts transfers using the same quintile coding used for model 2 in Table 3. The model suggests that those in the top quintile of wealth in 2000 transferred 159% more wealth between 1991 and 2000 than those in the middle quintile (i.e., 15,260 + 24,288 = 39548 versus 15,260). Those in the middle quintile transferred 69% more wealth than those in the bottom quintile (i.e., 15,260 versus 15,260–6244 = 9016). The second and fourth quintiles were in between these values.

Although the relationship between wealth and inter vivos transfers is therefore substantial, the question of primary concern is whether the gross amount of these transfer differentials by wealth are large enough to generate a higher level of self-perpetuation of wealth inequality in the future. To evaluate this possibility, we ask two questions similar to those posed for Table 3: (1) In the younger 2000 cohort, how much more money was transferred to the children of relatively wealthy parents in comparison to children of less wealthy parents? (2) How much larger is this difference than the equivalent difference for the older 1992 cohort? The answer to the first question is a within-cohort difference, whereas the answer to the second question is a difference of within-cohorts differences.

Suppose that we take the average reported transfer amount of $39,548 for the top quintile in 2000 and that we then grant those in the top quintile with zero reported transfers the full additional amount that could possibly have been eliminated by the left-censoring of the data (which is equal to $5,325). Forming the appropriate weighted average (see note), this would raise the average amount transferred over the past ten years to $42,663.[18] If we then deny any left-censoring bias to those in the bottom quintile, then the net differential in the transfer amount for those in the top quintile relative to those in the bottom quintile would be $33,617 (i.e., 42,663-9016 = 33,647). Thus, the answer to the first question posed in the last paragraph is $33,647 or less.

For the second question, note first that we do not have data on transfers for the older cohort from 1983 through 1992. But we do have comparative data from both cohorts for 1992 and 2000. Suppose that we make an extreme extrapolation from the cohort differences reported in Table 3, such that we assume that the within-cohort difference of $33,647 for the 2000 cohort reflects a (much larger than reasonable) 100% increase over the same

[18] Our calculation here is .585(5325) + .415(95296) = 42663 rather than .585(0) + .415(95296) = 39548.

difference for the older 1992 cohort.[19] If we assume that this transfer difference of $33,647 represents a 100% increase, then this is equivalent to assuming that the transfer difference between the top and bottom quintiles for the older cohort was only $16,823.5 between 1983 and 1992 (i.e., 33,647/2 = 16,823.5). Accordingly, the additional gross amount that the top quintile transferred in 2000 over the prior 10 years cannot be greater than $16,824 (i.e., 33,647-16,823.5 after rounding).

Invested wisely, $16,824 could accumulate to something substantial that could then be passed on to future generations, thereby spawning a non-trivial increase in inequality of wealth. However, the literature on inter vivos transfers suggests that most of these transfers are instead consumed immediately. They are often given for specific purposes, such as to help with unforeseen immediate expenses (e.g., emergency medical care or home repairs) or to help with unusual special purchases (e.g., a new violin for the grandson). They are rarely treated as venture capital by recipients. Moreover, note that, in order to get a number as large as $16,824, we have had to assert the most unreasonable assumptions that are still consistent with the data and compare those beyond the 80th percentile to those below the 20th percentile. Assuming that left-censoring bias was more equal, making a more reasonable assumption about the growth of the relative transfers for the top quintile, and comparing the top quintile to the middle quintile would all bring this gross amount down substantially.

We conclude that inter vivos transfers have not increased enough to generate much of a change in wealth inequality among the children of HRS respondents. If a change is to be expected, it may perhaps come in the form of larger end-of-life bequests from HRS respondents, as we assess next.

3.3.2. Cohort differences in bequest expectations

Table 5 presents OLS regression models of HRS respondents' subjective expectations of bequest probabilities. The specific dependent variable is a self-reported estimate of the probability that a respondent will leave a bequest of at least $100,000. As we note in Appendix A, the HRS bequest question asked in 1992 was changed for subsequent waves, thus precluding a comparison of the cohorts using 1992 and 2000 bequest expectations. However, in both 1994 and 2002, HRS respondents were asked:

> What are the chances that you (and your (husband/wife/partner)) will leave an inheritance totaling $100,000 or more?
>
> (00---10---20---30---40---50---60---70---80---90---100)
>
> where 00 is absolutely no chance and 100 is absolutely certain.

[19] Note that in Table 3, for a comparison of the top to the bottom quintiles, the transfer amounts were 6093 and 1613 for the 1992 cohort and 6787 and 1012 for the 2000 cohort, which equal differences of 4480 and 5775. Note that (5775–44800)/4480 = .289. Since this estimate of a 30% increase in the top-to-bottom quintile difference could be slightly wrong because of the non-comparable recall windows of the 1992 and 2000 data, we take the extremely pessimistic assumption that this number is off by more than a factor of three. In the text, we therefore assume that the increase was a full 100% not 28.9%. Note also that this assumption is extreme in one other respect. The growth of wealth that is evident by 2000 and that therefore generates the findings in Table 3 did not prevail over the entire prior decade. Thus, the cohort difference in transfers documented in the 1992-to-2000 comparison is probably more extreme than one would likely assume prevailed over the course of the two prior decades.

Table 5
Attrition-reweighted regression models predicting the self-reported probability of leaving a bequest greater than $100,000 for two cohorts, aged 59–61 in 1992 and aged 59–61 in 2000

	Model 1		Model 2	
	Coef.	SE	Coef.	SE
Intercept	.440	.014	.285	.024
Cohort	.111	.020	.185	.036
White male in single household	−.105	.051	−.008	.102
× Cohort	.041	.073	.027	.141
White female in single household	−.167	.032	.016	.063
× Cohort	−.077	.045	−.143	.085
Black in coupled household	−.234	.039	−.029	.036
× Cohort	.049	.060	.030	.052
Black male in single household	−.362	.043	−.116	.107
× Cohort	.052	.090	.054	.151
Black female in single household	−.335	.029	.030	.066
× Cohort	−.032	.046	−.178	.090
Other race in coupled household	−.188	.081	−.121	.078
× Cohort	.007	.106	.064	.096
Other race male in single household	−.283	.134	−.127	.112
× Cohort	−.182	.144	.069	.152
Other Race female in single H'hold	−.163	.132	.126	.106
× Cohort	−.103	.170	−.234	.137
Wealth >80th percentile			.451	.032
× Cohort			−.104	.045
× In single male household			−.001	.165
× Cohort			.093	.196
× In single female household			−.040	.105
× Cohort			.176	.127
Wealth >60th and <80th percentiles			.217	.034
× Cohort			−.041	.050
× In single male household			.210	.138
× Cohort			−.235	.202
× In Single Female Household			.036	.090
× Cohort			−.018	.131
Wealth >20th and <40th percentiles			−.151	.031
× Cohort			−.051	.050
× In single male household			.106	.127
× Cohort			−.015	.184
× In single female household			−.059	.074
× Cohort			.146	.104
Wealth <20th percentile			−.208	.031
× Cohort			−.120	.049
× In single male household			.012	.108
× Cohort			−.075	.147
× In single female household			−.052	.068
× Cohort			.078	.093
R^2	.078		.381	
N	3,633		3,633	

Notes: Standard errors are robust Taylor series standard errors, further adjusted for clustering within households.
Source: HRS, 1992–2000.

In addition to money, respondents were asked to include property and other valuable items in their calculations. The bequest probabilities in Table 5 are based on the questions asked in 1994 and 2002, but we use the explanatory variables derived from 1992 and 2000 survey data in order to maintain as closely as possible a correspondence to the other tables. In Appendix A, we provide a set of results that uses wealth variables based on the 1994 and 2002 data to predict these bequest probabilities, as well as a cross-tabulation of responses to bequest expectation questions in 2000 and 2002. The basic patterns of our results are the same, and thus we chose to preserve strict comparability with the analysis of 1992 and 2000 wealth differences.

For the models reported in Table 5, the two cohorts are modeled jointly, with the cohort variable referring to the younger cohort (i.e., bequest expectations for 59 to 61 year-olds in 2000 instead of 59 to 61 year-olds in 1992). Model 1 indicates that the average expected bequest probability increased for white respondents in coupled households from .440 to .551 between the two cohorts. For blacks in coupled households, the expected bequest probabilities were lower, but they increased slightly more substantially than for whites, from .206 to .366 (although, again, the standard errors are somewhat large). As usual, other-race respondents in coupled households were in between whites and blacks in coupled households, with average expected bequest probabilities of .252 for the 1992 cohort increasing to .37 for the 2000 cohort. For single households, the trends are a bit more heterogeneous (and subject to greater sampling error), but for the most part it appears that individuals living in single households had lower expected bequest probabilities.

In general, model 1 demonstrates that a higher proportion of the younger cohort expected in 2000 to leave a bequest greater than or equal to $100,000 upon death. Model 2 then includes the cohort-specific, quintile-coded wealth variable as a predictor. Here, the results are somewhat surprising. The estimated $100,000 bequest probability increased between cohorts from .736 to .817 for the top quintile of wealth (i.e., from .285 + .451 = .736 to .285 + .451 + .185–.104 = .817). This increase of only .081 was smaller than for the next three quintiles, where the same calculations show that the probability of leaving a bequest of $100,000 or greater increased from .502 to .646, from .285 to .470, and from .134 to .268. Only for the lowest quintile was the increase smaller, at .065 from .077 to .142. Thus, wealth strongly predicts the probability of making a bequest of $100,000 or greater, but change in expected bequest probabilities was non-monotonic, with the greatest increase in this particular estimated probability observed for the middle three quintiles.

The implications of these findings for the self-perpetuation of higher levels of inequality are, however, rather unclear. Apart from issues concerning whom the unknown beneficiaries of the expected bequests will be (children as opposed to spouses and charities, etc.), and whether these expectations are overly optimistic or not (perhaps based on overly pessimistic calculations of end-of-life expenses), our cohort design is fairly weak in one respect. The HRS survey instrument does not ask individuals to adjust for inflation in any way, nor to specify how far in the future the bequest is likely to occur (and thus whether its $100,000 reference amount is in current or future dollars). Nevertheless, because of inflation alone, it seems reasonable to assume that a nominal $100,000 bequest was subjectively larger for respondents from the older cohort than for the younger cohort, given that they considered the same nominal value of $100,000 ten years apart. Using the PCED inflation deflator that is used throughout the paper, a nominal $100,000 bequest for the older cohort would be equal to a nominal bequest for the younger cohort between $110,000 and $118,000 (depending on the time points chosen for the adjustment). For this reason, some of the increase in bequest probabilities between the two cohorts must reflect the real value of the $100,000 referenced in the questions.

Moreover, because we are evaluating only one threshold dollar value of $100,000, without any knowledge of the full distribution of respondents' point-expectations of their actual bequests, it is hard to infer how much these probabilities should have changed in order to confirm the expectation that the growth of wealth inequality has increased the inequality of expected bequests. For the top quintile of wealth, our results cannot rule out the possibility that the percentage of respondents expecting to leave behind a bequest of $200,000 or more increased more than for any other quintile (or, for that matter, increased more than the percentage of respondents in the top quintile who expected to leave behind a bequest of $100,000 or more).

In spite of these complications, it seems reasonable to conclude that these results give no evidence that inequality of bequests will increase substantially for the younger cohort. Less cautiously, but based only on the effects of inflation on these results, we are comfortable asserting that the top quintile of the wealthy in the younger cohort does not appear appreciably more likely to leave behind a sizable bequest of more than $100,000 than is the top quintile of the older cohort.

If we are correct in interpreting these results in this way, it must then be the case that some portion of the windfall wealth gains of those at the top of the wealth distribution in the younger cohort will be consumed over the lifecourse as a matter of lifestyle choice and/or to cover the costs of longer lives. But, even here, the prediction may be incorrect (both ours and that of HRS respondents). It may be that substantial numbers of HRS households are risk-averse and hence will continue to save in the face of uncertainty in the timing of death (Keister and Moller, 2000), thereby leaving behind higher, and perhaps more unequal, bequests than we or they expect.

3.4. Summary of empirical findings

We have presented two different sets of results in a cohort-based analysis of 59 to 61 year-olds in 1992 and 2000. Between these two cohorts, our results show that individuals in their fifties during the mid-to-late 1990s accumulated more wealth than immediately prior same-age cohorts. Moreover, the growth of wealth was uneven, with those at the top of the distribution pulling away from those in the middle.

Our results also show that, in spite of the growth of inequality of wealth, there is little evidence that a new level of self-perpetuation of wealth inequality has been reached. There is only modest growth in the inequality of inter vivos transfers between our two cohorts and a smaller-than-expected increase in the subjective probability of leaving behind a bequest of $100,000 for those at the top of the wealth distribution.

Because we do not have sufficient high-quality data on the very top of the wealth distribution, such as those beyond the 99th percentile, it is possible that the very wealthy have indeed reached a level of wealth such that they can protect their family dynasties from regressing back to the mean, and more than was the case in the past. But, as we look farther down in the distribution of wealth, where an increase in inequality is still evident, we do not see evidence in our results for the dire predictions cited in the introduction.

Nonetheless, black-white differences in wealth also increased between the two cohorts we studied. The 90th percentile of wealth among whites grew faster than among blacks while the median wealth of blacks fell further behind the median wealth of whites.

Moreover, black parents in the more unequal younger cohort transferred only about half of the amount of money to their children between 1991 to 2000 as white parents. When family size patterns are considered, the average per child transfer from black parents is even lower. Since these transfers are usually used to meet immediate needs, and because there is no reason to expect that white children have more needs than black children, it seems likely that blacks continue to receive less immediate financial support from their parents well into adulthood. Thus, even though the increase in inequality of wealth may not be large enough to shift the full structure of inequality into a new self-perpetuating equilibrium (in general or via inter vivos transfers), the accentuation of the black-white wealth gap may contribute to a slowdown in the rate of convergence in the social standing of black and white families.

4. Discussion

In this section, we discuss the limitations of our study, especially those that arise from our cohort-based design. We conclude with a discussion of causal models of intergenerational wealth relationships, which frames our interpretations and suggests further research.

4.1. Limitations of our cohort-Based comparison

Although cohort comparisons are common in applied demographic research, they have limitations. In our case, we have compared two cohorts at similar ages across two periods in time. We then interpreted the cohort differences that we observed as estimates of period differences between the 1980s and 1990s. There are two basic limitations of this research design. First, we cannot confidently say anything about cohorts other than the two three-year brackets we have selected. Second, the cohort differences we interpret as period effects may instead be genuine cohort effects.

For the concern that these two cohorts may be unique, one must consider its relevance with regard to the specific primary question we ask: Has the growth of wealth inequality crossed a threshold beyond which a new level of self-perpetuation should be expected across the full distribution of wealth? Although the 1990s was a period of rapid wealth accumulation, we have examined wealth accumulation only for those in their fifties.

One can defend this stage of the lifecourse as the period in which wealth accumulation is most dramatic (and perhaps most important). Aizcorbe et al. (2003, p. 7) show that, for the Survey of Consumer Finances, the mean of total net wealth for those between the ages of 55 and 64 increased by 73.9% between 1992 and 2001. In contrast, for those between the ages of 35 and 44, the mean of total net wealth increased by only 57.5%. But, of course, we concede that a more complete comparison would be ideal. It would be useful to know, in addition to our results, whether the increase in the inequality of wealth among those in their thirties will lead to an explosive growth of inequality of wealth in the decades to come, via the compounding of investment returns through the year 2030.

For the concern that our cohort differences are genuine cohort effects rather than period effects from the 1980s and 1990s, this claim is hard to evaluate. If pressed to defend our results, we would argue, for example, that socialization experiences, if present, operate in the opposite direction and thereby strengthen our conclusions. The older cohort is comprised of children who were born to parents just emerging from the great depression and who then entered early adolescence during the lean war years. The younger cohort, in contrast, grew up largely during the post-war boom. Thus, if early socialization experiences are important (perhaps as risk-aversion transmitted with a lag by parents), it would seem that these would minimize the period-interpreted cohort increase in wealth accumulation and maximize the period-interpreted cohort increase in transfer propensity. In other words, because the older cohort is more risk averse and prone to hoarding, they would presumably save more and transfer less.

Nonetheless, the large literature on confounded cohort and period effects suggests caution, and the rationale for our reasoning in this regard is mostly guesswork. Moreover, as we discussed earlier when explaining our procedures for attrition-adjustment, the younger cohort may well contain a non-trivial proportion of relatively low-wealth individuals who would have died before the age of 59 if they had been born earlier in the depression-era cohort. Thus, it is possible that cohort differences in wealth are underestimated slightly by our models. And this could, in turn, have affected our transfer models.

4.2. Modeling intergenerational effects on wealth accumulation

For most of our analysis, we treated wealth as single pool of resources. How wealth has grown is important for determining the future evolution of inequality. Were sufficient data available, we would have liked to have been able to determine the share of the growth in inequality of wealth that is attributable to: (1) growth in earnings inequality (by generating greater dispersion of income flows from which to save); (2) gradual shifts away from defined benefit to defined contribution pension plans (by generating greater dispersion of stocks of wealth that could benefit from the favorable investment environment over the same time period); or (3) by more general changes in investments returns on financial and housing assets.

If the first share of growth dominates, then the claim that inequality may be increasingly self-perpetuating would be strengthened, although perhaps more because of the increase in earnings inequality than wealth inequality. If the second share is large, then the claim would be weakened because the apparent growth in wealth inequality would be misleading. Intergenerational transfers could not change substantially, since total lifetime wealth would gradually equalize across family dynasties as defined benefit plans have sufficient time to pay off. And, if the third share of growth dominates, then the recent increase in wealth inequality across families would almost surely dissipate over time, as the transitory gains made by some families will smooth out as investment opportunities moderate and the short-run gains are spread across intergenerational transfers to offspring (especially if the interpretations of our transfer models earlier are correct). All of these more fine-grained explanations need to be evaluated before we will be able to determine the ultimate consequences of the recent growth of wealth inequality.[20] In this article, we have offered only the first steps of such a more comprehensive analysis.

Furthermore, and perhaps most important of all, we have only barely penetrated the complex intergenerational mechanisms that sustain within-dynasty, family-level

[20] In order to assess the relative sizes of these components of growth, other less theoretically intriguing explanations would also need to be assessed, such as: (4) Changes in the age structure of the population and attendant health expenses which have feedback effects on income, savings rates, and wealth accumulation; (5) Changes in the timing of retirement in response to the elimination of mandatory retirement ages and the strong labor market of the 1990s; (6) Changes in the costs of family formation and consequent cohort-changes in fertility.

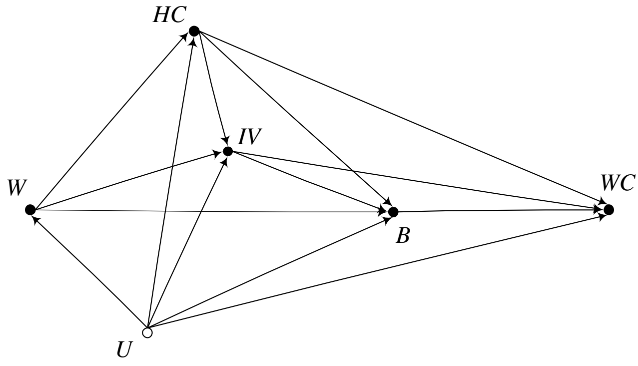

Fig. 2. A directed acyclic graph that is a plausible causal model for the relationship between the wealth of HRS respondents (W) and their children (WC).

correlations of wealth. To frame this limitation of our study, we conclude with a discussion of a broader model of intergenerational wealth relationships—a provisional causal model that we wish we had the data to estimate and that demonstrates the possible fragility of our interpretations.

Suppose that we are interested in modeling the wealth of a generation of individuals at the age of 60 and then the wealth of that generation's children when they reach the age of 60. To consider the extent to which the former may determine the latter, and in the context of the HRS data that we analyzed earlier, we offer a directed acyclic graph as a causal model (see Pearl, 2000 on the usage of directed acyclic graphs to represent causal relationships). As presented in Fig. 2, the wealth *W* of HRS respondents is depicted as an indirect and partial cause of the wealth *WC* of the children of HRS respondents (when they reach the same age at which *W* is measured for the parents' generation, which would be in the years 2022 and 2030, approximately, for the two cohorts we analyzed).

We propose that the effect of a set of exogenous shocks that increase the dispersion of *W*, as we have argued occurred in the 1990s for our younger HRS respondents, will have an effect on the dispersion of *WC* that is intercepted partially by three intervening variables: *HC*, human capital investments; *IV*, inter vivos transfers; and *B*, bequests.

The weakness of the correspondence between the theory and empirics of wealth accumulation, which is summarized in the introduction, are evident in how we have drawn the provisional causal model in Fig. 2. The only arrows we feel comfortable eliminating (and only barely so) are what give the diagram its kite structure. We assume that *W* has a meaningful effect on *WC* only via the front-door associations created by the causal pathways through *HC*, *IV*, and *B*. And, we assume that a substantial portion of the total association between *W* and *WC* is generated by back-door associations created by an exogenous and latent unobserved variable *U*.

The variable *U* stands in for all manner of other common direct causes of both *W* and *WC*, such as features of social standing other than wealth (e.g., average family-level earnings), personality differences that run in families (e.g., propensities to save based on family differences in risk aversion), and common shocks to the wealth of both parents and children that are idiosyncratic but correlated within families (e.g., investment tips from family friends). Furthermore, by allowing for the possibility that *U* mutually causes *HC*, *IV*, and *B*, we allow for the possibility that the causal pathways from *W* to *WC* via *HC*, *IV*, and *B* are neither isolated nor exhaustive, such that, for example, the components of *U* can contribute to the total association between *W* and *HC*.

In spite of its abundance of arrows, there is meaningful structure to the model in Fig. 2 which is consistent with the dominant positions in the literature on wealth accumulation. There seems to be broad agreement on a basic life-course ordering of *HC*, *IV*, and *B*.[21] Most scholars are willing to assert that parents first determine how much human capital to invest in their children, based on reasonable expectations of their own lifetime accumulation of wealth. These investments in human capital shape later decisions about inter vivos transfers by altering the needs of children. Finally, bequests are then determined based on how much wealth has been expended already for human capital investments and for inter vivos transfers, with the size of a bequest falling to the extent that wealth is passed along before parents die. Thus, the ordering of *HC*, *IV*, and *B*, the implied separation of the net direct effects of *W* on each of them, and the implied negative direct effects of *HC* on *IV* and of *IV* on *B* (net of any back-door paths through *U*) are broadly consistent with the literature summarized earlier.

Now, return to the conclusions of our analysis of intergenerational transfers, and suppose that we conceive of the graph in Fig. 2 as applying separately to each cohort. If this model is invariant and modular for all cohorts, in the sense that a shock to *W* for any single cohort does not change the direction or size of the causal relationships in the graph, then a greater dispersion of *W* for the more unequal cohort would result in a greater dispersion of *WC* as could be observed in a comparison of *WC* for the children of the two cohorts in the years 2022 and 2030, respectively. If, in the course of undertaking such an analysis, one were to find a much smaller increase in the dispersion of *WC* than expected under assumptions of invariance and modularity (as, for example, would be the case if *WC* has the same variance for the children of both cohorts, net of all else), then this result would be indirect but compelling evidence that the invariance of the relationships does not hold across cohorts. Such invariance would arise, for example, if HRS respondents of the younger cohort chose to consume some of their windfall gains in wealth and as a result lowered the percentage of wealth that they decided to pass on to their children via *HC*, *IV*, or *B*. This would occur, for example, if the wealthiest members of the older cohort decided to commit 30% of their wealth to support their children but the wealthiest members of the younger cohort decided to commit only 20% of their wealth for the same purposes (presuming perhaps that such an amount is drawn from a larger pool and therefore is still sufficient to capitalize continued dynastic success).

Unfortunately, for our analysis, we did not have a measure of *WC*, and in fact we would have to wait many years for such data to arrive. But, we used the same reasoning in order to consider how cohort differences in the dispersion of *W* may be related to *IV* and *B*. Consider how the interpretations of our results presented earlier can be summa-

[21] However, even this orderly life-course-based set of assumptions may be an over-simplification, primarily because decisions may be made in a different order. Parents might determine first how much of a bequest they wish to leave behind, after which they then decide how much to transfer while they are still living. This possibility is considered extensively in the strategic bequest literature discussed earlier. Because we recognize these alternatives, we lay out the model in Fig. 2 as a provisional causal ordering of what we would wish to evaluate in ideal conditions of data availability, and which we maintain is the most uncontroversial representation of the dominant positions in the relevant background literature on wealth accumulation. But, for example, it could be the case that *B* precedes *IV*, for at least some family dynasties.

rized using the graph in Fig. 2. For the younger HRS cohort, the dispersion of W was larger. However, the total association between W and IV was quite modest, and the increased dispersion of IV was also quite modest. Moreover, respondents' own expectations about B do not suggest that an increase in the dispersion of B commensurate with the observed increase in the dispersion of W is likely to emerge for the children of the younger cohort. These findings suggest that the relationships between W and IV and between W and B weakened at the same time that inequality of wealth increased. In turn, these results then imply that the provisional causal model represented by the graph in Fig. 2 is not invariant and modular for all cohorts. Therefore, the supposition that an increase in the dispersion of W will lead to a commensurate increase in the dispersion of WC is unwarranted.

As much as we may be convinced that these results do not support the dire predictions that a new equilibrium of an increasingly self-perpetuating inequality has been reached, Fig. 2 shows very clearly why our limited results may have led us to an incorrect judgment. First, it is possible that the most important causal pathway that will lead to greater inequality of WC is the one via human capital investments in children, which we were unable to evaluate with the HRS data because we lack sufficiently detailed information on the educational careers of the children of HRS respondents. It is possible, for example, that the reason we have observed only a relatively weak increase in the dispersion of IV in response to the increase in the dispersion of W is that the association we have estimated is confounded by a suppressant back-door association via HC. The children of the relatively wealthy members of the younger cohort may have received augmented investment in their human capital which then lowered their needs for inter vivos transfers from their parents. In this scenario, the direct effect of W on HC may have strengthened, and the net negative direct effect of HC on IV may have then suppressed more of the total association between W and IV than was the case before the shock to W arrived.

Even though this possibility is genuine, we know of no literature that conclusively shows one way or the other whether the increase of wealth inequality has contributed to a growth of inequality of educational attainment (see discussion and results in Morgan and Kim, 2006). And, at least for the younger cohort we considered, the children of HRS respondents were well into their educational careers by the time inequality of wealth increased in the 1990s. Thus, the applicability of this competing narrative is probably stronger for slightly younger cohorts than the two that we consider.

Second, because the HRS respondents we analyzed were still living, we were only able to use respondents' own forecasts of what B will be. Accordingly, as we noted earlier, their expectations could be incorrect, as HRS respondents may not be able to accurately forecast their own life expectancies, savings rates, and returns on their investments in the interim. Hurd and Smith (2001, 2002) provide some evidence on the validity of these expectations that is encouraging. Even so, we recognize that our inferences based on bequest expectations may be misleading predictions about the future dispersion of B. Within the graph of Fig. 2, this would come about via non-random measurement error that generates a back-door association via U that suppresses the observed association between W and our possibly flawed measure of B. Substantively, this latent variable could be a form of pessimism that is positively associated with W (via higher precautionary savings) and negatively associated with bequest expectations (via positively biased expectations of later-life expenses). These relationships would pull expectations of B below true levels of B for relatively wealthy respondents. But, in order for this competing narrative to obtain, it must apply more strongly to the younger cohort, which may be the case because of the emergent uncertainties of later-life expenses for this cohort.

Although we have used the causal model in Fig. 2 to point out how (and why) our inferences could be incorrect, the causal model also serves as a guide for further research. We would be in a better position to interpret our results if we knew more conclusively from the background literature whether we might be justified in asserting additional conditional independence assumptions in the model. For example, the back-door threat of *HC* to the estimation of the *W–IV* relationship could be eliminated if we knew that inter vivos transfers were largely unresponsive to the human capital differences of children, perhaps when conditioning on some features of *U*. Thus, it is possible that our interpretations can be qualified or modified in the future in response to additional research on these relationships.

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