Senior Honors Project

Department of Economics

**"Intergenerational Transmission of Educational Attainment:
A Look at Racial Differences"**

James Imhoff

10 May 2018

Abstract

As a people, an overwhelming majority of Americans believe that hard work alone can push even the most disadvantaged of us beyond our upbringing. The link between parental and child labor outcomes in the form of educational attainment, income, or social class is known as intergenerational correlation. Due to vast differences in black and white American educational attainment, this paper conducted a study to measure just exactly how parental education will impact a child's future. As literature and theory suggest, parental education, family income, race, gender, and several other factors all have a tangible benefit on determining how much schooling a person seeks out. This study focuses on the impact that, specifically, parental levels of educational attainment have on child's future education. Using the Panel Study of Income Dynamics at the University of Michigan data was collected on these variables listed above. Ordinary Least Square regression and a TOBIT model were run to conclude how intergenerational transmission of education differs by race. This study concludes that overall, black American heads of household are not as influenced by parental levels of education as white American heads of household. In one example, white female heads of household can expect to gain almost twice the benefit from a parent finishing high school rather than not completing high school when compared to black females. This paper suggests that in order to close the gap between black and white educational attainments differences, increasing the emphasis placed on achieving more education may not be an effective solution for diminishing the gap.

Table of Contents

I. Introduction

America has traditionally been thought of as the country of endless potential. This is the idea that, no matter who you are or where you are from, anybody can succeed here. Unfortunately however, this is not always the case. In fact, Reeves (2013) notes low rates of upward social mobility[1] in the U.S. which can lead to losses in terms in human capital. If people are not able to escape their background and succeed, we are denying smart, disadvantaged children the opportunity to reach above their parents' class (Reeves, 2013). As seen from the existing literature, intergenerational social mobility also exists between black and white Americans (Mason, 2007), (Vartanian, Buck, & Gleason, 2007). Intergenerational mobility is usually thought of as economic outcomes relayed from parent income to children income. However, income inequality is not the only form of inequality in the U.S. Minorities are still lagging behind in terms of educational attainment when compared to non-Hispanic white Americans. According to a United States Census Bureau release from 2016, in 2015 only 32.4% of black and 22.7% of Hispanic Americans aged 25 or older had an Associate's degree or higher. By comparison, 46.9% of non-Hispanic whites had an Associate's degree or higher (Ryan & Bauman, 2016). It is also known that there is a strong relationship between education and future earnings. This leads to the central question being, is there a difference in the intergenerational correlation of education dependent on race in our country?

One study by the Boston Consulting Group for the Sutton Trust in the UK estimated that if the United States was to close its educational attainment gap, we could expect a 4% boost in Gross Domestic Product per year (Reeves, 2013). This shows that intergenerational correlation in educational attainment is more than simply a matter of leveling the playing field for those who

---

[1] Social mobility being the movement of people between social classes. Includes income, schooling, etc.

have been economically disadvantaged. Closing this gap of educational attainment for racially or economically marginalized communities has positive effects in the economy as well. According to basic theory dating back to Gary Becker, human capital, or what makes humans more productive, is strongly rooted in education. The main focus of this study is on the impact that parental schooling has on the education level achieved by the children.

Intergenerational correlation, also known as intergenerational elasticity or IGE[2], is the relationship between the socio-economic characteristics of a parent and those of the child. My topic will differentiate from previous literature on this topic by focusing on the role that race plays on the intergenerational educational correlation. Previous research on the subject has been confined to testing differences in educational attainment between various cohort groups over the years while ignoring potential racial differences. One author controls for race in the regression analysis in order to control for differences in average levels of educational attainment by race (Huang, 2012). However, Huang (2012) assumes that the intergenerational correlation for education is the same across racial groups. In this study I will test if this assumption is correct.

II.   Literature Review

The first paper on educational intergenerational correlation is by Jin Huang entitled, "Intergenerational Transmission of Educational Attainment". The author also focuses on the role that household incomes and assets play on children's educational outcomes as well as the intergenerational transmission (IGE) of education. The data used to estimate the model in this research is the PSID. Using cohort data of 1984 and 1994, the author regressed mother education, household economic resources, a combined term of economic resources and mother's education, and a set of control variables onto child's education to determine differences between

---

[2] These are interchangeable when intergenerational correlation also refers to logged earnings of parent onto logged earnings of the child.

the two cohorts. They concluded that, compared to the 1984 cohort, parent-child educational correlation, measured through regression coefficients, for the 1994 cohort is smaller for girls and larger for boys. This is dependent on the inclusion of financial assets in the regression analysis (Huang, 2012).

One paper which focuses on the difference in educational attainment by race and ethnicity is by Gang and Zimmerman (2000). However, rather than focusing solely on race within a country, they look at the difference between various immigrant ethnic groups in Germany and how those groups perform when compared to the native population. Their study uses the Gary Becker allocation-of-time model to derive the demand for education for the households by assuming that the potential income of the households is maximized. They use a cross-sectional dataset, measuring individuals who were 17-38 years old in 1984. In their results they find that large differences in educational attainment exist between the various ethnic groups in Germany[3]. Moreover, they found that while German parents had positive relationship on German children's educational attainment, the same cannot be said for those born to immigrant parents. They also acknowledge the existence of several factors outside of the household such as neighborhood influences that can also effect a child's educational attainment (Gang & Zimmerman, 2000).

One paper by Keane and Wolpin (2001) focuses on the extent that parental subsidies, in the form of monetary transfers and "in-kind" transfers, and the differences between these, explains the positive intergenerational correlation of educational attainment. In particular, they want to see if transfers that take place when the child is 16 years old will make a difference on his or her decisions about how much schooling to accumulate. They find that even students of

---

[3] Ethnic groups focused on include: Greeks, Turks, Germans, Italians, Yugoslavs, and Spaniards

low ability are more likely to enroll in college when their parents are of an affluent background. They show that the main source behind the intergenerational correlation factor lies in the fact that parents who have more money invest more in their child's future. It is estimated that without the inclusion of college attendance transfers from parent to child, the mean educational attainment of the children will fall by a year. They conclude that some of the intergenerational correlation of educational attainment arises because college educated parents do make these college transfers onto their child (Keane & Wolpin, 2001).

A study by Oreopoulus, Page, and Stevens (2006) attempts to isolate the causal effect of parent's education on the future children's well-being[4]. They use a sample of children ages 7-15 taken from the 1960, 1970, and 1980 U.S. census. The identification strategy rests on the changes in compulsory education. They showed that children made greater earnings when their parents were forced into additional schooling. They also found that a one year increase in years of schooling for the parents translated to a drop in 2-4 percentage points for the probability that a child is at "grade-for-age"[5]. Finally, they noted that parents with greater education had a more favorable outlook on their children's schooling and were more likely to have the financial resources to provide better schooling for their child (Oreopoulus, Page, & Stevens, 2006).

One specific paper relating to upward earnings mobility focuses on the effects that race and family values have on intergenerational mobility. Data was collected from the PSID and restricted to persons 6-17 years old in 1972. Children's income was measured for this group from 1983 to 1993 when the initial children were 17-28 and then again when they were 27-38 and the income levels were averaged. Intergenerational mobility was measured once again by regressing

---

[4] Well-being being a measure of a child's outcome of years of schooling among other educational outcomes
[5] Grade for age is a measure that the child tests at the average level for their age group. This negative parameter estimates insinuates that the child will be above their grade level

parent versus child income and this was separated by race, sex, and those previously mentioned family values and class status variables. They found that class affects intergenerational mobility more than values with large differences associated with race. Social class is based upon the hypothesis that "interracial differences in the transmission of socioeconomic status are solely the result of interracial differences in family socioeconomic status". Family values is based upon the hypothesis that "interracial differences in the transmission of socioeconomic status are the result of interracial differences in family behaviors". (Mason, 2007).

III.   Theory and Hypothesis

Although the topic of intergenerational transmission or correlation of education is not as extensively researched as intergenerational elasticity of income, the basic model is still based on Becker and Tomes (1979):

$$y_t = \beta y_{t-1} + \alpha E_t \tag{1}$$

where y_t represents the child's lifetime earnings, β is the correlation between child and parent's labor outcome, y_{t-1} is parental labor outcome, and E_t is a set of control variables which are also found to affect y_t (Ashenfelter & Card, 1999).

Intergenerational elasticity in represented by the relationship between a person's outcomes and their parents' outcomes. These outcomes can be anything from education to income. This is achieved through regression of the intergenerational parameter of the father onto the child. A regression line slope of 1 means that the gap between parental and child achievement is a perfect relationship. On the other hand, a slope of 0 indicates that no relationship exists between the two (Borjas, 2000). According to research by Chetty et al. (2014) the U.S. average for income IGE is 0.341 using a rank-rank model[6].

---

[6] Rank-rank slope measures the degree to which the differences in children's income is determined by parental income

From previous research we know that several influential factors on determining educational attainment include family income, the cost of higher education, race, gender, parental education, the economic advantage of additional schooling, family size, and academic performance (Gayle, Berridge, & Davies, 2002), (Mare, 1979), (Gang & Zimmerman, 2000).

For our purposes we will be examining an OLS regression model of parental education on child educational attainment along with other various regressors, such as family income when the head of household was younger, onto this childhood educational attainment and then separating the results by race and gender. In cross-sectional data studies for intergenerational correlation, an OLS is the standard regression method. Our testable hypothesis is that race will have a negative effect on intergenerational education attainment. This meaning that non-Hispanic white heads of households will be more positively impacted by increased years of parental education.

IV. Data and Methodology

In this paper, the specific labor outcome to be analyzed is educational attainment and the transmission of educational attainment from parent to child. The empirical specification by Huang (2012) provides guidance for the implementation of equation (2):

$$Y = \beta_0 + \beta_1 ME + \beta_2 HE + \beta_3(MT * HE) + \beta_4 X + \varepsilon \tag{2}$$

where Y represents child's education, ME denotes mother's education, HE represents household economic resource in the form of assets and income, which is measured in 1996 for the '84 cohort and in 2007 for the '94 cohort. These children were 13-20 years old when initial data was gathered and 25-32 when household resources were calculated again. Finally, X is a set of control variables and the error in the model is represented by ε. Huang chose to use different

birth cohorts for his study to analyze differences over time. Because this study uses only one group of people, the cohort aspect of his study will not be replicated.

It is important to note that the above equation also contains an interaction term, combining household resources with mother's education. This research process will not include an interaction term and will include both mothers' and fathers' educational attainment because these may play different roles dependent on the sex of the head of the household.

The first step in this process was to obtain summary statistics for all the variables of importance. Because much of the data obtained is categorical, several dummy variables will be created to represent parental education level, race, and sex.

The second step of the process was to merge family income datasets dating back to 1968 to create one combined dataset where a single family income variable could be created. This family income variable corresponds to the family income of the head of household when they were 16. This variable was then adjusted for inflation using the CPI with base years of 1982-1984 = 100. The ages of head of households ranges from 16 in 2007 to 55 in 2007[7].

Data was obtained through the Panel Study of Income Dynamics collected by the University of Michigan. This study began in 1968 and has steadily collected information on 5,000 initial families in the United States to study everything from child development, wealth, and various other topics[8]. 2007 was the main year of focus for the study. Household income was collected for every year available in the PSID for 1968-2007. The PSID is the source for all the data collected in this study.

---

[7] 55 year olds were 16 in the initial year of 1968
[8] https://psidonline.isr.umich.edu/default.aspx

Table 1: Variables with Summary Statistics

Variable	Definition	[Mean ; Std. Dev.]	[Min ; Max]
FAMINC	Family income taken from the year the head of household was 16	[34,011.75 ; 35,045.14]	[1.004 ; 1,195,078.03]
lFAMINC	Natural log of FAMINC	[10.12 ; 0.88]	[0.004 ; 14.50]
Black	Dummy variable for race of head of household	[0.35 ; 0.48]	[0 ; 1]
Female	Dummy variable for gender of head of household	[0.29 ; 0.46]	[0 ; 1]
FLessThan	Dummy variable for father having less than a high school education	[0.23 ; 0.42]	[0 ; 1]
FHighSchool	Dummy variable for a high school graduate father	[0.46 ; 0.50]	[0 ; 1]
FCollege	Dummy variable for father having some college attained or more	[0.32 ; 0.46]	[0 ; 1]
MLessThan	Dummy variable for mother having less than a high school education	[0.18 ; 0.39]	[0 ; 1]
MHighSchool	Dummy variable for a high school graduate mother	[0.49 ; 0.50]	[0 ; 1]
MCollege	Dummy variable for mother having some college attained or more	[0.32 ; 0.47]	[0 ; 1]
HeadEduc	Years of education attained by the head of household	[13.37 ; 2.09]	[1, 17]

Note: All Data Courtesy of PSID, 3930 observations for each variable

Table 1 contains the list of variables along with summary statistics. A total of 3,930 complete observations were obtained. The parent's education is coded as a set of dummy variables because it is reported in ranges by the dataset. Along with parental education are race and sex dummy variables. Family income is real income, adjusted for inflation. The dependent variable, head of household education ranges from 0-17. Up until 16 years it measured the respondent's education as years of completed education. However, the number 17 represents 17 years of education or more than 17 years of education. Because of this censoring from above where all values over 17 take on 17, a TOBIT analysis was done.

V. Results

Our initial process and regression used an ordinary least squares method as illustrated from equation 3 below:

$$HeadEduc_i = \beta_0 + \beta_1 FHighSchool_i + \beta_2 FCollege_i + \beta_3 MHighSchool_i + \beta_4 MCollege_i +$$
$$\beta_5 lFamInc_i + \varepsilon_i \tag{3}$$

where Black is the race dummy variable, FHighSchool and MHighSchool are dummy variables for parents' education representing achieving a high school education or post-graduate certificate or professional degree. FCollege and MCollege are dummy variables for parents' education level representing some college to a post-graduate degree. In our study, the reference group for parental education is achieving less than a high school degree. Female is a dummy variable for gender, and lFamInc represents logged total family real income measured in the year when the head of household was 16. These education and income variables were regressed onto the total level of education achieved by the head of the family. Shown in Table 2 is the results of our first OLS regression. This regression is separated by race and gender. The four groups analyzed were white male, white female, black male, and black female head of households.

The second round of regression used a TOBIT analysis. The TOBIT analysis corrects for potential upwardly biased parameter estimates that would occur as a result of the truncated data for head of household education. Head of household educational attainment was numerical from 0-16 years achieved while 17 represented 17 years of education and beyond. The TOBIT regression results follow in Table 3.

Table 2:

	OLS Regression			
	MALE		FEMALE	
	WHITE	BLACK	WHITE	BLACK
Intercept	***8.009	***9.126	***6.447	***8.905
	[15.10]	[12.03]	[5.43]	[12.02]
lFAMINC	**0.403	***0.330	***0.505	***0.341
	[7.83]	[4.19]	[4.18]	[4.44]
Mother Education				
MHighSchool	***0.455	0.227	***1.143	0.248
	[3.20]	[1.28]	[4.44]	[1.49]
MCollege	***0.978	***0.812	***1.945	***1.099
	[6.09]	[3.84]	[6.93]	[5.13]
Father Education				
FHighSchool	***0.527	0.083	*0.391	0.119
	[4.15]	[0.50]	[1.70]	[0.74]
FCollege	***1.659	***1.005	***1.348	***0.751
	[11.61]	[4.64]	[5.29]	[3.31]
Observations	2045	716	501	665
R-Square	0.2321	0.1329	0.3353	0.1333

*Note: *, **, and *** represent statistical significance at 10%, 5%, and 1% levels*
Figures in brackets are t Values

A review of the OLS results reveals a few interesting trends. The first trend to mention is the nature of how a mother and father's education influences the head of household's education level dependent on sex. If the head of a household is a woman, the education level of their mother's is more influential in determining their education and vice versa for men. For example, white women heads of households receive an estimated boost of about 2 additional years of education from their mother attending college compared to the control group, whereas white males receive about an additional year of education relative to the reference group. White males receive a boost in expected educational attainment of 1.659 years relative to the control group when a father goes to college and only about 1 year from their mother attending college. Black females receive an estimated 1 year of education from mother attending college rather than

obtaining less than a high school education while only gaining about ¾ of a year in educational attainment from a father in the same circumstances.

When looking at racial differences between head of household educational attainment, it is beneficial to limit interpretations to the same gender. Because there exist differences between genders, the only way to analyze differences between races in within the same gender. The first difference between races is the lack of statistical significance for the parameter estimates of high school parental education for black heads of households. White heads of households receive a significant benefit in the expected years of education attained. White females receive an expected 1 additional year of education while black females receive an insignificant ¼ additional year. White male heads of households receive about ½ additional year of education when their father or mother attends high school instead of not completing high school while black males are not impacted by their father or mother going to high school.

The second difference between races is the impact that collegiate attendance of the parent has on the future heads of households. White males and black males receive similar impacts from their mother attending college over not finishing high school but that is where the similarities end. White females receive almost twice the expected gain in education from either father or mother attending college than black females. White males receive gain about 1.7 times the benefit from having a father attend college than black males receive. Finally in assessing goodness of fit, the R Square values reported, ranging from 0.1329 to 0.3353 could be improved with the inclusion of several control variables. Following in Table 3 are the results of the TOBIT regression for the same empirical model.

Table 3:

| | | TOBIT Regression | | |
| | MALE | | FEMALE | |
	WHITE	BLACK	WHITE	BLACK
Intercept	***7.747	***9.060	***6.012	***8.842
	[13.53]	[11.55]	[4.61]	[11.55]
lFAMINC	**0.430	***0.338	***0.551	***0.350
	[7.74]	[4.16]	[4.16]	[4.41]
Mother Education				
MHighSchool	***0.446	0.227	***1.182	0.255
	[2.91]	[1.24]	[4.19]	[1.48]
MCollege	***1.016	***0.839	***2.026	***1.123
	[5.86]	[3.83]	[6.58]	[5.07]
Father Education				
FHighSchool	***0.546	0.075	0.338	0.113
	[3.99]	[0.44]	[1.34]	[0.68]
FCollege	***1.762	***1.057	***1.426	***0.764
	[11.43]	[4.70]	[5.09]	[3.25]
Observations	2045	716	501	665
Observations at UB	173	29	54	26
_Sigma	1.970	1.770	1.990	1.834
Log Likelihood	-4127	-1408	-1003	-1332

*Note: *, **, and *** represent statistical significance at 10%, 5%, and 1% levels*
Figures in brackets are t Values

The results from the TOBIT analysis are almost identical to the results from the OLS model. The only difference between the two models was correcting for possible upward biasing in parameter estimates. The number of observations at the upper bound ranged from 3.9% of observations for black females to 10.8% of observations for white females. The largest differences in parameter estimates seen were for white male and female heads of households. The lFAMINC variable also had a greater impact on the prediction for years of education attained by the head. The greatest differential between the two was in the TOBIT analysis, a white female would gain an additional 0.0551 years of education from a 10% increase in real family income while in the OLS regression, the white female head would see a 0.0505 additional years of education with that same 10% increase in real family income. _Sigma is a parameter

estimating the variance of error and log likelihood is a figure for assessing the goodness of fit for the model.

VI. Conclusion, Limitations, and Future Studies

From this study, it is obvious that there does exist a discrepancy between educational attainment correlations by race. Per the regression results, white heads of households tended to see a greater impact from higher parental education attainment than black heads of household. White females see almost twice the benefit from parents going to college than black females see. Along with this is black heads of households, in general, with just high school graduate parents are expected to gain less of an educational attainment benefit than white heads of households.

Another conclusion to draw is that the OLS is an adequate measure of fit for the regression analysis. Although the log likelihood is not a comparable figure to the R Square value from OLS, the number of observations at the upper bound along with the lack of robust variance between parameter estimates from OLS and TOBIT suggest that the OLS is an adequate fit. In order to directly compare the log likelihood of both models, a PROC GLM would have to be ran for the initial OLS model. Due to time constraints a PROC GLM was not ran.

One limitation to this study is the amount of data for black male and female and white female heads of households. However, due to the dataset used, not much could be done to alleviate these issues and add some additional relevance and significance to these groups. Several of the parameter estimates associated with parental education such as MHighSchool are close to being significant for both black and white female heads of household and with additional data it is possible that these variables could have an impact on explaining educational attainment and the transmission of this educational attainment for heads of households.

A second limitation to this study is the lack of inclusion of several control variables explaining educational attainment. Among those are the cost of higher education, the anticipated economic advantage of additional schooling, and academic performance. Once again, due to limitations of the dataset used, both academic performance and the economic advantage perceived by individuals would not be available for usage in this study. However, the cost of higher education is a variable that past research states is relevant and this would have been possible to include. It was not included because of time constraints.

This paper may also potentially give new insight into future policies put in place to lessen the divide between black and white educational attainment differences. For one, the differences between the impact that is felt from parental education by race shows that simply encouraging and advocating for more education on the side of the parents may not close the gap. At worst, it may exacerbate the gap. Because the lFAMINC also differed by race, increasing funds at a flat level may not improve the gap either. Most likely, policies focused on improving school quality for disadvantaged black families would most likely be more beneficial towards lessening the gap. The inclusion of a school quality variable would also be an interesting feature to look at in future research.

Along with this inclusion, future research would also benefit from changing the research to analyzing multiple age cohorts. Seeing how intergenerational transmission of education from parent to child has changed over time would be an interesting extension of this research while also adding to policy implications. Future studies may also have an added benefit to their study if they analyze a separate dataset. One issue with the PSID is that it does not allow for regionalization studies. An analysis of this study including regionalization could give an added

dimension to the base study. A separate dataset could also include school quality which was a

variable that the PSID did not account for.

VII. References

Ashenfelter, O. C., & Card, D. (1999). Handbook of Labor Economics. *Handbooks in Economics 5, 3A*, 1763-1764.

Becker, G. S., & Tomes, N. (1979). An equilibrium theory of the distribution of income and intergenerational mobility. *Journal of Political Economy, 87*, 1153-1189.

Borjas, G. J. (2000). *Labor Economics.* McGraw-Hill.

Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014, September 14). Where is the land of Opportunity? The Geography of Intergenerational Mobility in the United States. *The Quarterly Journal of Economics, 129*(4), 1553-1623. Retrieved from https://academic.oup.com/qje/article/129/4/1553/1853754

Corak, M. (2013). Income Inequality, Equality of Opportunity, and Intergenerational Mobility. *The Journal of Economic Perspectives*, 79-102. Retrieved from http://www.jstor.org/stable/pdf/41955546.pdf

Gang, I. R., & Zimmerman, K. F. (2000). Is Child Like Parent? Educational Attainment and Ethnic Origin. *The Journal of Human Resources, 35*(3), 550-569. Retrieved from https://www.jstor.org/stable/pdf/146392.pdf?refreqid=search:725943180b076b14acd0272e41ffe706

Gayle, V., Berridge, D., & Davies, R. (2002, March). Young People's Entry into Higher Education: Quantifying Infuential Factors. *Oxford Review of Education, 28*(1). Retrieved from http://www.jstor.org/stable/1050748

Huang, J. (2012). Intergenerational Transmission of Educational Attainment, The Role of Household Assets. *Center for Social Development Working Papers*. Retrieved from https://csd.wustl.edu/publications/documents/wp12-18.pdf

Keane, M. P., & Wolpin, K. I. (2001). The Effect of Parental Transfers and Borrowing Constraints on Educational Attainment. *International Economic Review, 42*(4), 1051-1103. Retrieved from https://onlinelibrary.wiley.com/doi/epdf/10.1111/1468-2354.00146

Mare, R. (1979). Sources of Educational Growth in America. *Focus*. Retrieved from https://www.irp.wisc.edu/publications/focus/pdfs/foc32b.pdf

Mason, P. L. (2007). Intergenerational Mobility and Interracial Inequality: The Return to Family Values. *Industrial Relations, 46*(1), 51-80. Retrieved from https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1468-232X.2007.00457.x

Oreopoulus, P., Page, M. E., & Stevens, A. H. (2006, October). The Intergenerational Effects of Compulsory Schooling. *Journal of Labor Economics, 24*(4), 729-760. Retrieved from https://www.jstor.org/stable/pdf/10.1086/506484.pdf?refreqid=search:725943180b076b14acd0272e41ffe706

Reeves, R. V. (2013, August 16). The Economic Case for Social Mobility. *Brookings*. Retrieved from https://www.brookings.edu/opinions/the-economic-case-for-social-mobility/

Ryan, C. L., & Bauman, K. (2016). *Educational Attainment in the United States: 2015*. U.S Department of Commerce. United States Census Bureau. Retrieved from https://www.census.gov/library/publications/2016/demo/p20-578.html

Saez, E. (2016, June 30). Striking it Richer: The Evolution of Top Incomes in the United States. *Econometrics Laboratory*. Retrieved from https://eml.berkeley.edu/~saez/saez-UStopincomes-2015.pdf

Vartanian, T. P., Buck, P. W., & Gleason, P. (2007). Intergenerational Neighborhood-Type Mobility: Examining Differences between Blacks and Whites. *Housing Studies, 22*(5), 833-856. Retrieved from https://www.tandfonline.com/doi/full/10.1080/02673030701474792?scroll=top&needAccess=true