

# HOME OWNERSHIP AND THE WEALTH POSITION OF BLACK AND WHITE AMERICANS\*

BY HOWARD BIRNBAUM AND RAFAEL WESTON

*Harvard University*

This paper examines the wealth position of blacks relative to whites, on the basis of data in the Survey of Economic Opportunity. The analysis indicates that at the same levels of both income and wealth blacks consistently invest more in consumer durables, especially housing, than do whites. The paper then explores possible explanations for this finding, suggesting that these investment differences are not solely due to the income and wealth position of blacks, but may be due to a smaller set of investment opportunities institutionally fostered by discriminatory forces.

## INTRODUCTION

Most economic research on differences between black and white Americans has concentrated on income, employment, and prices, and their relationship to discrimination in the labor and housing markets, and has ignored wealth considerations. Two recent papers by Henry Terrell<sup>1</sup> and by John F. Kain and John Quigley<sup>2</sup> are important exceptions. Both demonstrate the importance of including wealth considerations in evaluating the economic situation of blacks.

In the first section of this paper, we provide a more complete description of the wealth position of blacks, by expanding Terrell's analysis of their investment portfolios, using the same data source, the Survey of Economic Opportunity. We present tabulations for various wealth categories to provide an overview of their investment behavior and to provide a foundation for the remainder of this paper. Our analysis indicates that blacks and whites follow fundamentally different patterns of investment: at the same levels of both income and wealth, blacks consistently invest more in consumer durables, especially housing, than do whites.

We then examine these differences in investment behavior in the context suggested by Kain and Quigley. They find that blacks have a substantially lower probability of home ownership, a result they attribute to housing market discrimination. They speculate that this impediment to home ownership may explain,

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<sup>1</sup>Henry Terrell, "Wealth Accumulation of Black and White Families: The Empirical Evidence," paper presented at the American Economic Association-American Finance Association Convention (Detroit: December 1970).

<sup>2</sup>John F. Kain and John M. Quigley, "Housing Market Discrimination, Home Ownership, and Savings Behavior," *American Economic Review* (June 1972).

at least in part, the lower levels of black wealth accumulation at every income level.

Our findings suggest, however, that the Kain and Quigley result may be due to their specification of the model. A somewhat different specification, with at least an equally strong basis in theory and econometrics, suggests that it is quite possible that blacks have a *higher* probability of owning a home than do "equivalent" whites. While all such "conclusions" must remain tentative, for reasons discussed in the final portion of this paper, we suggest that these investment differences are *not* solely due to the income and wealth position of blacks. Rather, these investment differences with black "overinvestment" in housing, relative to whites, may be due to a smaller set of investment opportunities which has been institutionally fostered by an information gap created by the forces of discrimination.

#### PORTFOLIOS OF BLACKS AND WHITES

To summarize distributional inequalities, Terrell's work emphasized Gini coefficients. However, in order to gain a better understanding of the processes behind these distributions, it is necessary to disaggregate this summary statistic. Thus, a set of tabulations was computed. In this section we first summarize these tabulations, and then discuss the clear pattern which emerges. The appendix describes our data.

Tabulations displayed in Table 1 reveal the relatively well known fact that wealth is much less evenly distributed than income among both blacks and whites. This result holds for every category of wealth, except home equity and car equity, which are distributed quite similarly to income. In addition income appears to be more evenly distributed among whites than among blacks, although the difference is not large.<sup>3</sup> Within each classification of wealth, and overall, much the same pattern of inequality occurs when looking at the distribution of wealth by income class. In total wealth and in each of its components, the top 5 percent of households (by income) hold disproportionately large amounts of most assets, as does the top 20 percent and to some degree, the next 20 percent. Car and home equity are the least unequally distributed while stocks and business equity are the most unequal. This is especially pronounced in the case of blacks, where virtually no business or stock is held outside the top 20 percent and most of that is held by the top 5 percent. Home equity is less unequally distributed for blacks than for whites while the opposite is true of most other equity. Also, in every income group, blacks have net debt in the "other" category (which includes unpaid bills, loans to others, etc.). Further, the greatest proportion of this debt is held by the middle and upper income classes; for whites, only the middle income classes have net debt in this category.

<sup>3</sup>Some of the differences in our results and those reported by Terrell can be explained by differences in methodology. Terrell computes two sets of Gini coefficients; both computations yield lower coefficients for whites than for blacks (lower coefficients imply greater equality). The first set, based on all observations, imputes a zero figure for total wealth to those people who do not report any of certain categories of wealth. The information is coded in this form in the Survey. The second set is based on a sample in which "no responses" and households who reported zero wealth were both eliminated. In Table 1 "no responses" are excluded, but actual zeros are included, a procedure made possible by other information in the Survey.

TABLE 1  
DISTRIBUTION OF ASSETS AMONG INCOME CLASSES BY RACE\*

	Percent					
	Bottom 1-20	20-40	40-60	60-80	80-100	Top 95-100
<i>White</i>						
Farm and other real estate	4.2	10.1	5.9	41.7	38.1	18.1
Business equity	6.7	2.3	10.8	16.9	63.3	42.4
Car equity	9.4	12.5	17.2	24.3	36.6	10.3
Money	10.9	10.0	16.1	20.8	42.2	14.6
Bonds	9.8	6.4	8.6	21.7	53.5	35.4
Stocks	3.4	2.3	5.0	30.5	58.8	48.9
Home equity	8.4	10.6	14.9	26.2	39.9	12.8
Other	4.3	(7.3)	(4.8)	37.5	70.3	47.0
Total wealth	6.8	7.9	10.5	29.4	45.4	22.8
Income	6.6	13.2	18.3	23.4	38.5	14.4
<i>Black</i>						
Farm and other real estate	1.6	8.7	5.6	10.5	73.6	46.7
Business equity	0.0	0.9	2.4	1.0	95.7	82.8
Car equity	6.0	7.5	20.7	24.3	41.5	11.4
Money	0.9	11.4	10.0	17.3	60.4	27.0
Bonds	0.4	5.0	12.9	33.9	47.8	20.0
Stocks	0.0	0.0	1.7	6.4	91.9	74.0
Home equity	13.1	12.1	18.3	24.1	32.4	8.5
Other	(4.7)	(10.8)	(43.1)	(25.1)	(16.3)	(0.1)
Total wealth	9.8	10.3	11.8	20.2	47.9	21.9
Income	5.9	11.6	18.1	25.6	38.8	12.6
Income Bounds on Percentiles						
	1-20	20-40	40-60			
White	(-4,300)-5,000	5,000-7,340	7,400-9,300			
Black	60-2,770	2,800-4,600	4,690-6,660			
	60-80	80-100	95-100			
White	9,320-12,500	12,520-82,550	17,360-82,550			
Black	6,660-9,080	9,100-24,160	12,950-24,160			

\*Table 1 shows what percent of each asset is held by specified percentile groups of income (rows sum to 100 in table). All categories are net equity = asset value - debt owed. Wealth is the sum of the eight preceding asset categories. Parentheses note negative net equities.

The tabulations in Table 2 are meant to provide some perspective on the absolute amounts involved in these comparisons. On average, whites hold approximately 4.5 times as much wealth as blacks, compared to only 1.5 times as much income. This result holds within each income class, where whites hold from

**TABLE 2**  
**MEAN HOLDING OF EACH ASSET BY INCOME GROUP AND RACE AND**  
**PROBABILITY OF OWNERSHIP**

	0- 2,500	2,500- 5,000	5,000- 7,500	7,500- 10,000	10,000- 15,000	15,000- 20,000	Over 20,000	All
<i>White</i>								
Farm and other real estate	353	1,185	2,109	2,127	7,820	12,860	13,936	4,436
Business equity	4	619	127	903	660	4,558	10,321	1,164
Car equity	441	530	665	936	1,479	1,954	2,571	1,051
Money	1,615	1,564	1,353	2,077	3,819	5,499	12,281	2,805
Bonds	22	176	86	237	168	310	3,150	255
Stocks	273	700	339	767	4,738	2,004	51,729	3,073
Home equity	5,812	1,578	3,726	5,852	11,371	12,609	23,564	7,195
Other	-110	416	-385	-120	2,148	1,417	14,359	947
Total wealth	8,408	6,768	8,021	12,779	32,201	41,213	131,910	20,925
Income	1,401	3,854	6,070	8,651	12,053	16,627	32,616	9,139
<i>Black</i>								
Farm and other real estate	58	175	297	500	1,748	5,086	1,500	550
Business equity	0	10	30	16	273	13,907	0	294
Car equity	160	198	586	674	1,066	1,429	1,365	513
Money	21	151	236	342	850	4,694	300	360
Bonds	0	11	46	134	99	329	25	56
Stocks	0	0	5	69	27	2,571	250	63
Home equity	2,181	1,984	3,587	4,587	4,113	6,929	11,500	3,266
Other	-129	-325	-1,242	-555	-710	1,853	-2,250	-580
Total wealth	2,290	2,204	3,544	5,766	7,466	36,797	12,690	4,520
Income	1,616	3,578	6,182	8,628	11,734	16,634	22,585	6,196
Probability of ownership for Whites	0.441	0.222	0.415	0.642	0.824	0.860	0.857	0.594
Probability of ownership for Blacks	0.177	0.236	0.433	0.537	0.636	0.571	1.000	0.390

2.5 to 4.5 times the wealth of blacks, at least up to incomes of \$15,000. At incomes above \$15,000 there are so few observations that the results are not very meaningful.

The portfolio composition for black and white households is displayed in Table 3. No monotonic relationship exists between income and the percentage of wealth held in the various assets. For some assets, such as farm and other real equity, business equity, and stocks, a positive relationship is apparent. For car and home equity, an inverted U-shape seems more likely. Most important, however, Table 3 gives the initial suggestion that blacks and whites differ fundamentally in their investment patterns with blacks investing more in assets yielding consumption services. Indeed, 72 percent of all black wealth is held in home equity, while whites invest only 35 percent of their wealth there. Yet only

TABLE 3  
PERCENT OF TOTAL WEALTH IN EACH ASSET CLASS BY INCOME  
GROUP AND RACE\*

	<i>Bottom</i>					<i>Top</i>	
	1-20	20-40	40-60	60-80	80-100	95-100	All
<i>White</i>							
Farm and other							
real estate	12.0	26.3	10.9	30.5	18.0	16.8	21.1
Business equity	5.4	1.6	5.7	3.2	7.7	10.3	5.5
Car equity	6.9	7.9	8.2	4.1	4.0	2.2	5.0
Money	21.4	17.0	20.5	9.5	12.4	8.6	13.5
Bonds	1.7	0.9	0.9	0.9	1.5	1.9	1.3
Stocks	7.4	4.4	7.0	15.3	19.1	31.5	14.7
Home equity	42.1	46.0	48.9	30.7	30.3	19.4	34.4
Other	3.1	(4.1)	(2.1)	5.8	7.0	9.3	4.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Black</i>							
Farm and other							
real estate	2.0	10.3	5.7	6.3	18.7	25.8	12.1
Business equity	0.0	0.5	1.3	0.2	12.9	24.4	6.4
Car equity	6.9	8.2	19.8	13.6	9.8	5.9	11.3
Money	0.7	8.8	6.7	6.8	10.0	9.7	8.0
Bonds	0.0	0.6	1.3	2.1	1.2	1.2	1.3
Stocks	0.0	0.0	0.2	0.5	2.7	4.7	1.4
Home equity	96.5	85.0	111.3	86.4	49.0	28.3	72.3
Other	(6.1)	(13.4)	(46.3)	(15.9)	(4.3)	0.0	(12.8)
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

\*Table 3 shows the portfolio distribution by income group; that is, what percent of total wealth is held in each asset (columns sum to 100).

39 percent of blacks own their homes as compared to 59 percent of whites. One possible explanation for the concentration of black wealth in home equity is that blacks are forced to buy consumption goods because of their much lower income position. However, most black wealth is in consumer durables, even among the highest income blacks. The top 20 percent of blacks by income have a higher percentage, 49 percent, invested in home equity than does any white income class. At every income level, blacks consistently invest a larger percent of wealth both in home and car equity than do whites. Comparing similar income groups: the top 20 percent of blacks (income range \$9,100-\$24,160) invested approximately 60 percent of their wealth in cars and housing, while the 60-80 percent income group of whites (income range \$9,300-\$12,500) invested only 35 percent of their wealth in those durable consumption goods. Thus it seems clear that there is a reason other than pure economic necessity for the large relative "overinvestment" by blacks in home and car equity.

One possibility is that the presentation of the data in Tables 1-3 by income class obscures a fundamental wealth relationship. It may be that a smaller percentage of that wealth is put into investments such as home equity as wealth rises. Since it has already been shown that whites have more wealth than do

blacks at every income level (by a factor of 2.4–4.5), it would be quite reasonable for blacks to put a larger fraction of their smaller portfolios into housing.

This possible wealth explanation is considered in Table 4, which shows comparative portfolio distributions for blacks and whites by absolute wealth level. No significant negative relationship between level of wealth and the proportion invested in home equity is apparent. Further, blacks put a far larger share of their wealth into home equity than do whites at every level of wealth.

TABLE 4  
PERCENT OF TOTAL WEALTH IN EACH ASSET CLASS BY WEALTH GROUP AND RACE

	\$ 0– 2,500	\$ 2,500– 5,000	\$ 5,000– 10,000	\$ 10,000– 15,000	\$ 15,000– 20,000	\$ 20,000– 30,000
<i>White</i>						
Farm and other real estate	6.9	8.2	5.1	13.2	7.9	7.1
Business equity	0.0	7.9	2.0	2.6	2.2	1.2
Car equity	65.4	26.3	12.8	8.1	6.6	6.5
Money	32.2	18.8	15.4	16.9	10.8	17.4
Bonds	1.2	1.1	1.1	1.0	0.4	2.3
Stocks	0.5	1.2	3.0	2.2	1.3	7.1
Home equity	30.4	61.1	63.1	57.0	71.7	53.0
Other	(36.6)	(17.5)	(2.8)	(1.0)	(0.8)	(5.4)
	100.0	100.0	100.0	100.0	100.0	100.0
<i>Black</i>						
Farm and other real estate	0.5	7.5	9.0	11.1	2.0	1.3
Business equity	3.7	0.1	0.7	0.0	1.0	0.0
Car equity	65.0	21.4	9.9	6.1	11.3	6.1
Money	20.5	13.1	3.2	7.0	3.5	11.7
Bonds	8.7	0.8	1.3	0.9	1.1	0.5
Stocks	1.2	0.1	0.0	0.9	0.2	0.7
Home equity	46.2	70.6	85.1	78.1	84.9	81.3
Other	(46.0)	(13.7)	(9.2)	(4.1)	(4.1)	(1.5)
	100.0	100.0	100.0	100.0	100.0	100.0

Whites tend to invest more in car equity, but the difference is much smaller than in the case of housing. Again the finding indicates that blacks of similar wealth “overinvest” in durable consumption goods relative to whites of similar wealth. No tabulations are given for those families with negative wealth or wealth over \$30,000 because the number of observations was too few.

What explains these differences in the behavior of black and white households? Two possibilities, not unrelated, immediately come to mind: discrimination and lack of sophistication about investment opportunities. Discrimination is usually thought of in terms of the housing market, but it may well exist in the markets for these other assets also. If the barriers in these other investment

markets are greater than in the housing market, blacks may, for lack of an alternative, be forced to invest in housing. Moreover, the fact that blacks tend to put more of their wealth into housing than do whites is not, by itself, evidence against the existence of housing market discrimination. For example, Kain and Quigley have elsewhere found that blacks pay approximately 8 percent more than whites for similar housing bundles, a result which may be taken as evidence of price discrimination.<sup>4</sup>

Blacks may be less familiar with the usual means of obtaining investment information that is available to the well educated and upper classes. This lack of information could result from a combination of educational achievement and social class background. Because of discrimination and other environmental considerations, blacks may not know how to evaluate the information they do have. A good deal of information on investment possibilities comes from friends and business associates. Because of housing market and job discrimination, middle class blacks are limited in the extent of their informal contacts with middle class whites.

It is tempting to conclude that blacks make fewer "correct" investment decisions than whites, and that blacks thereby earn lower rates of return, and have lower rates of capital accumulation. A satisfactory test of this hypothesis, however, would require information on alternative rates of return, which is unavailable. Therefore, we can merely conclude that blacks, for a number of reasons, invest differently than whites and, relative to whites, "overinvest" in consumer durables. This "overinvestment" in consumer durables is of considerable interest. In particular, the tendency of blacks to invest more than whites in housing merits further inspection, given the extensive literature on housing market discrimination.

#### PROBABILITY OF HOME OWNERSHIP

Since 72 percent of black wealth is in housing, achieving an understanding of black investment in home equity is central to an explanation of black wealth accumulation. Our tabulations of the SEO demonstrate that whites are far more likely to own their homes (59 percent vs. 39 percent for blacks). It is differences such as these that can lead to arguments of discrimination in housing markets. A fairly large body of literature has been built up investigating the question of whether blacks, due to discrimination, pay more than whites for housing of a given quality. While the issue is not thoroughly resolved, the consensus is that blacks pay considerably more.<sup>5</sup> However, this Becker-type of price discrimination may not be the only, or even the most important form of housing market discrimination. It may be that, rather than having to pay a higher price for any given type of housing, blacks are simply less able to buy houses under any circumstances. Moreover, housing bundles in certain locations are totally unavailable to blacks.

<sup>4</sup>John F. Kain and John M. Quigley, "Measuring the Quality and Cost of Housing Services," *Journal of the American Statistical Association* (June 1970).

<sup>5</sup>For a listing of sources, see Kain and Quigley, "Housing Market Discrimination," p. 1.

In a recent paper John Kain and John Quigley consider this second type of housing market discrimination.<sup>6</sup> Gross figures on black and white ownership rates, such as those cited earlier, are deceptive since on average blacks have lower incomes and less education than whites, attributes which have been shown to be positively correlated with home ownership.<sup>7</sup> Kain and Quigley attempt to show that even after correcting for “all” relevant socio-economic characteristics, blacks still have a significantly lower probability of owning a home than do whites.

Kain and Quigley apply regression analysis to a large body of detailed information collected from households in the St. Louis area. The dependent variable is a dummy variable, 1 if the household owns a house, 0 if it does not. The independent variables included most relevant socio-economic characteristics of the household, including race. The calculated value of the dependent variable in such a regression may be interpreted as the conditional probability of home ownership for given values of the socioeconomic characteristics. The coefficient of the race variable then may be interpreted as the difference in the probability of ownership between blacks and whites, after correcting for all of the other measured household characteristics.

The results of the Kain and Quigley regression are reproduced in Table 5. Of primary interest to our analysis is the race coefficient, which they interpret as indicating that blacks have an 8.8 percent lower probability of home ownership than whites, holding all other relevant characteristics equal.

Kain and Quigley offer three possible explanations for this difference: 1. tastes, 2. wealth considerations, 3. discrimination. After considering all three, they conclude that discrimination is the explanation and that “supply restrictions” on black residential choice and the types of housing available are the most likely mechanisms at work. These “supply restrictions,” they assert, mean blacks are less able to take advantage of favorable income tax provisions available to home owners and the lower long run costs of owning. This impairment, they argue, may reduce black savings rates and impede capital accumulation.

While this analysis is an interesting approach to the problem, it, in turn, raises other problems. Kain and Quigley conclude that blacks are less likely to own their homes than whites even after black-white differences in pertinent socioeconomic characteristics are considered. Yet, we find that blacks invest a significantly larger proportion of their wealth in housing. While these two results are not necessarily inconsistent, they do need to be reconciled.

Two problems with the Kain and Quigley work are apparent. First, their statistical models do not include measures of the household’s wealth, because these data were not available. This suggests all relevant characteristics may not have been held equal. Second, our analysis indicates that the investment behavior of blacks and whites are quite different. This leads us to question Kain and Quigley’s use of a single equation with a racial dummy variable. It may be that two separate equations should be estimated for blacks and whites. Kain and Quigley tested this hypothesis and rejected it using their different data. However, our analysis suggests that the question should be re-examined using the SEO data.

<sup>6</sup>Kain and Quigley, “Housing Market Discrimination.”

<sup>7</sup>James N. Morgan, “Housing and Ability to Pay,” *Econometrica* (April 1965).

TABLE 5  
OLS AND GLS ESTIMATES OF THE PROBABILITY OF HOME OWNERSHIP

Variables	OLS	GLS
Race	-0.150 <sup>a</sup>	-0.088 <sup>a</sup>
Income	0.013 <sup>a</sup>	0.026 <sup>a</sup>
Education	0.005 <sup>d</sup>	-0.006 <sup>d</sup>
Yrs. current job	0.009 <sup>a</sup>	0.002 <sup>c</sup>
Retired	0.241 <sup>a</sup>	0.231 <sup>a</sup>
None employed	-0.035	-0.011
More than one employed	0.041 <sup>d</sup>	0.171 <sup>a</sup>
<i>Families</i>		
Age	0.033 <sup>b</sup>	0.002 <sup>b</sup>
Number of persons	-0.136 <sup>a</sup>	-0.156 <sup>a</sup>
Number of children	0.045 <sup>a</sup>	-0.013
Female head < 45 yrs.	-0.270 <sup>a</sup>	-0.007
Female head > 45 yrs.	-0.188 <sup>b</sup>	-0.192 <sup>b</sup>
<i>Household types</i>		
Single female < 45 yrs.	-0.312 <sup>a</sup>	-0.403 <sup>a</sup>
Single female > 45 yrs.	-0.147 <sup>a</sup>	-0.295 <sup>a</sup>
Single male < 45 yrs.	-0.172 <sup>c</sup>	-0.277 <sup>b</sup>
Single male > 45 yrs.	-0.040	-0.108 <sup>d</sup>
Couple < 45 yrs.	-0.306 <sup>a</sup>	-0.213 <sup>a</sup>
Couple > 45 yrs.	0.032	-0.004
Constant	0.302 <sup>a</sup>	0.409 <sup>a</sup>
R <sup>2</sup>	0.213	0.826

Significance of *t* ratios for coefficients:

<sup>a</sup> > 0.01.

<sup>b</sup> > 0.05.

<sup>c</sup> > 0.10.

<sup>d</sup> *t* ratio greater than 1.0.

As a first step, we estimated an equation similar to Kain and Quigley's (Table 6). While the equation is not precisely the same (there were, for example, no data in the SEO on the number of years on the job), the results are quite similar to those of Kain and Quigley. The race coefficient is somewhat smaller, but it is still substantial and significant. Then we estimated a second equation using wealth as an additional variable (Table 6). Both equations are estimated by Generalized Least Squares, following the Kain and Quigley procedure.<sup>8</sup> Wealth is defined as the sum of net equity in home, farm and other real estate, business, car, money, bonds, stocks, and a residual we have called "other." When the wealth variable is added, the coefficient on race decreased in absolute value and

<sup>8</sup> Arthur S. Goldberger, *Econometric Theory*, Wiley and Sons, New York, 1964. Goldberger (p. 249) has shown that when the dependent variable is dichotomous [(0,1) in this case], the classical assumption of homoskedastic disturbances is untenable. Therefore we used a two-stage procedure. First, we estimated the equation by Ordinary Least Squares, and calculated fitted values,  $\hat{p}$ . Second, we performed a weighted regression, using  $[1/\hat{p}(1-\hat{p})]^{1/2}$  as weights.

TABLE 6  
PROBABILITY OF HOME OWNERSHIP, SEO DATA

	Probability of Ownership without Wealth		Probability of Ownership with Wealth	
	Coefficient	<i>t</i> Ratio	Coefficient	<i>t</i> Ratio
<i>R</i> : Race (1 = black, 0 = white)	-0.093	2.60	-0.059	1.78
<i>T</i> : Retired (1 = yes, 0 = no)	-0.10	1.13	-0.090	1.13
<i>E</i> : Years Education	-0.017	3.28	-0.0046	0.94
<i>Y</i> : Income (10's of dollars)	0.00026	7.14	0.00018	4.54
<i>A</i> : Age	0.011	5.79	0.0084	4.80
<i>N</i> : Natural log of number of persons	0.29	6.72	0.19	4.81
<i>CP</i> : Children present (1 = yes, 0 = no)	-0.062	1.35	-0.0048	0.11
<i>W</i> : Wealth (10's of dollars)	—	—	0.000021	5.22
<i>X</i> <sub>1</sub> : At least 1 worker (1 = yes, 0 = no)	-0.16	4.18	-0.016	0.39
<i>X</i> <sub>2</sub> : More than one worker (1 = yes, 0 = no)	0.94	2.48	0.10	3.17
<i>X</i> <sub>3</sub> : Single female over 45 (1 = yes, 0 = no)	-0.33	4.12	-0.077	1.03
<i>X</i> <sub>4</sub> : Single male under 45 (1 = yes, 0 = no)	-0.41	2.05	-0.18	0.97
<i>X</i> <sub>5</sub> : Single male over 45 (1 = yes, 0 = no)	-0.24	1.63	0.061	0.45
<i>X</i> <sub>6</sub> : Married couple under 45 (1 = yes, 0 = no)	-0.11	2.69	0.077	1.83
<i>X</i> <sub>7</sub> : Married couple over 45 (1 = yes, 0 = no)	-0.19	2.79	0.027	0.41
Intercept	-0.0095	0.086	-0.27	2.57
<i>R</i> <sup>2</sup>	0.32	—	—	0.47

its *t* ratio fell from 2.6 to 1.8. The coefficient of wealth is positive, with a *t* ratio of 5.2. The employment and family variables (*X*<sub>1</sub>–*X*<sub>7</sub>) have low *t* ratios, but they were retained to keep the equation similar to the Kain and Quigley one, and while the individual *t* ratios are small, when groups of the variables were tested together, the *F* statistic was significant. These regression results confirmed our view that differences in wealth cannot be neglected in any analysis of the economic behavior of black and white Americans.

We now consider our second objection to the Kain and Quigley model—their use of a single equation. Since blacks and whites invest differently, separate equations should be estimated. Therefore, the sample was stratified and Chow tests were performed for the separate equations both with and without wealth. For the specification without wealth, the *F*-statistic is  $F(14,872) = 2.59$ ; for the specification with wealth, the *F* statistic is higher  $F(15,870) = 4.52$ . The critical value, at the 0.01 level is 2.02. In both cases, therefore, the null hypothesis that

TABLE 7  
PROBABILITY OF HOME OWNERSHIP FOR BLACK AND WHITE HOUSEHOLDS

	Blacks		Whites	
	Coefficient	<i>t</i> Ratio	Coefficient	<i>t</i> Ratio
<i>T</i>	0.021	0.19	0.0058	0.57
<i>E</i>	-0.0056	0.91	0.0029	0.49
<i>Y</i>	0.00022	3.73	0.00010	2.43
<i>A</i>	0.013	5.26	0.0071	3.02
<i>N</i>	0.075	1.87	0.29	4.87
<i>CP</i>	0.079	1.70	0.0051	0.085
<i>W</i>	0.00019	8.20	0.000016	3.64
<i>X</i> <sub>1</sub>	0.019	0.49	0.10	1.61
<i>X</i> <sub>2</sub>	0.082	1.87	-0.0065	0.16
<i>X</i> <sub>3</sub>	-0.24	3.67	0.27	2.19
<i>X</i> <sub>4</sub>	-0.13	0.67	-0.0070	0.25
<i>X</i> <sub>5</sub>	-0.39	2.63	0.54	3.81
<i>X</i> <sub>6</sub>	0.036	0.83	0.28	3.90
<i>X</i> <sub>7</sub>	0.0061	0.77	0.28	3.09
Intercept	-0.47	3.90	-0.61	4.67
<i>R</i> <sup>2</sup>	0.58		0.51	

blacks and whites behave the same was rejected. The separate equations, including wealth, are shown in Table 7.

Kain and Quigley clearly demonstrate that there are important differences among cities. Therefore our data for several cities may obscure some of these differences. These same equations were re-estimated using a sample of 172 observations from St. Louis, the city which Kain and Quigley used. No important changes have taken place (Table 8). The smaller *t* ratios reflect the reduction in sample size. The St. Louis results confirm the findings based on national data and demonstrates that the inability to pool the two equations is not an accident of the data used.

Given these two separate equations for blacks and whites, in order to test the results concerning probability of ownership, we calculated predicted mean probabilities by inserting mean values of the variables into the equations. A comparison of these probabilities serves the same purpose as the racial dummy variable in the single equation model. Three different sets of mean values—entire sample means, black means and white means—were inserted into the equations, both including and excluding wealth, Table 9. Interpreting the estimated equations as describing the behavioral patterns of blacks and whites, and the means as average socioeconomic characteristics of each group, a number of interesting hypothetical comparisons can be made.

In all three cases without a wealth term, we found that whites have a higher probability of owning a home. However, when we inserted the means into the equations containing a wealth term, contradictions began to appear. In two of the three cases, we found that blacks appear to have a higher probability of ownership than do whites. Using entire sample means, blacks have a higher probability

TABLE 8  
PROBABILITY OF HOME OWNERSHIP, FROM SEO DATA, FOR ST. LOUIS

	Race Dummy—No Wealth		Race Dummy—With Wealth		Black Equation with Wealth		White Equation with Wealth	
	Coefficient	<i>t</i> Ratio	Coefficient	<i>t</i> Ratio	Coefficient	<i>t</i> Ratio	Coefficient	<i>t</i> Ratio
<i>R</i>	-0.10	1.22	-0.03	0.40	—	—	—	—
<i>T</i>	0.49	3.50	-0.07	0.43	-0.10	0.67	-0.32	1.06
<i>E</i>	-0.01	1.11	-0.027	2.27	0.029	2.83	-0.030	1.74
<i>Y</i>	0.00015	1.81	0.00028	2.26	0.00032	2.94	0.00046	0.54
<i>A</i>	0.0044	1.07	0.0096	2.45	0.0074	1.88	0.012	1.89
<i>N</i>	0.085	0.81	0.043	0.42	0.039	0.67	0.061	0.35
<i>CP</i>	0.19	1.75	0.17	1.70	0.11	1.38	0.16	1.05
<i>X</i> <sup>1</sup>	0.16	2.12	0.19	2.12	0.024	0.37	-0.027	0.17
<i>X</i> <sup>2</sup>	0.19	2.48	0.12	1.45	-0.065	0.97	0.090	0.76
<i>X</i> <sup>3</sup>	0.33	1.75	-0.14	0.85	0.55	3.74	0.071	0.23
<i>X</i> <sup>4</sup>	0.091	0.36	0.0036	0.15	-0.52	0.46	0.36	0.89
<i>X</i> <sup>5*</sup>	—	—	—	—	—	—	—	—
<i>X</i> <sup>6</sup>	0.020	0.21	0.011	0.11	0.045	0.70	0.25	1.48
<i>X</i> <sup>7</sup>	0.14	0.88	0.081	0.57	0.44	3.54	0.11	0.45
<i>W</i>	—	—	0.000043	1.35	0.00036	3.98	0.00010	3.23
Intercept	-0.28	1.21	-0.32	1.34	-0.75	3.12	-0.17	0.50
<i>R</i> <sup>2</sup>	0.49		0.51		0.74		0.61	

Chow Tests: No wealth:  $F(13,146) = 2.51$ .  
 With wealth:  $F(14,144) = 4.98$ .  
 Critical 0.01 Value = 2.21.

\*Limitations of the St. Louis sample made it impossible to include  $X^5$  in these equations.

TABLE 9  
PREDICTED MEAN PROBABILITIES OF HOME OWNERSHIP FOR NATIONAL SAMPLE

Means Inserted	Without Wealth		With Wealth	
	Black Equation	White Equation	Black Equation	White Equation
Total sample	0.393	0.533	0.618	0.533
Black sample	0.390	0.482	0.390	0.474
White sample	0.406	0.592	0.797	0.592

than whites, 0.62-0.53; using white means, blacks again were higher, 0.80-0.59. However, using black means in the wealth equations, whites have a higher probability, 0.47-0.39. The same procedures yielded similar results with the St. Louis data, Table 10.

TABLE 10  
PREDICTED MEAN PROBABILITIES OF HOME OWNERSHIP FOR ST. LOUIS SAMPLE

Means Inserted	Without Wealth		With Wealth	
	Black Equation	White Equation	Black Equation	White Equation
Total sample	0.464	0.510	0.624	0.528
Black sample	0.368	0.457	0.368	0.470
White sample	0.580	0.597	0.895	0.597

The following interpretation may be given to this last set of results. Overall, we predict a higher probability of ownership for the average person in our sample, using the black behavioral equation. However, the average black in our sample would have a higher expected probability of owning a home if he behaved as a white in a white world, while the average white would have a higher probability if he behaved as a black in a black world. While America today is more closely approximated by the white world hypothesis, it is still the ambiguity of these results which stands out. Without wealth considerations, whites do appear to have a higher probability of home ownership. When we allow for the effect of wealth, however, we become aware that the results are quite dependent on the exact formulation of the model. Thus, it is clear that the problem is more complicated than it initially appears. Both the specification of our model and Kain's and Quigley's are inadequate.

## THE SIMULTANEITY PROBLEM

Since home equity comprises the largest single portion of total wealth, there is a serious simultaneity problem. The relative magnitudes of the coefficients are symptomatic of this. As expected, income, age, and family size are important for both blacks and whites. However, blacks have a much larger coefficient on wealth. Further, a computed Beta-coefficient on wealth was overwhelmingly high for blacks, but not for whites. There is no theoretical justification for this divergence if wealth is simply a behavioral determinant of home ownership. While we have been viewing wealth as a determinant of home ownership, the causal chain also runs the other way. Thus, for blacks, wealth plays the role of a dummy variable in our equation, positive if blacks own a home and zero if they do not. What we are left with is very close to an identity. One solution to this problem is to develop and estimate a complete simultaneous model.

Since other research has found the demand for housing to be correlated with the level of educational attainment, note that education rarely enters significantly in our model. Part of the problem may be a trade-off which exists between receiving from one's parents either education which would increase wealth indirectly in the long run, or an inheritance which would directly enter into wealth. Unfortunately, no data on inheritance were available. In addition, the simultaneous relationship of income and wealth is clear. What is ultimately needed, then, is a model which begins with inheritance, education and a better set of life cycle variables. These would then enter into a grand model which simultaneously determines wealth (perhaps broken down into its component parts), home ownership and income.

While such a model is beyond our present capabilities, it was possible to make a crude correction by redefining the wealth variable so as to purge it of that portion causing the simultaneity. Using other definitions of wealth, all of which excluded home equity, all equations were re-estimated and predicted probabilities re-calculated. In some of these formulations, the results changed,

TABLE 11  
COEFFICIENTS ON RACE,  
UNDER VARYING DEFINITIONS OF WEALTH

	Coefficient	t Ratio
Wealth = $W$	-0.059	1.78
Wealth = $W - HE$	-0.061	1.39
Wealth = $W - HE - FOE - BE$	-0.082	2.64
Without Wealth	-0.093	2.60

Where:  $W$  = Wealth as defined previously as the sum of Farm and Other Real Estate, Home Equity, Business Equity, Car Equity, Money, Bonds, Stocks, and "Other."

$HE$  = Home Equity.

$FOE$  = Farm and Other Real Equity.

$BE$  = Business Equity.

while in others they remained the same. No consistent pattern was apparent. This can be seen in Table 11 which shows, as an example, sets of race coefficients and  $t$  ratios for three possible definitions of wealth. Any final conclusions on the question of probability of ownership must await further research.

While it is quite possible then that blacks do have a higher probability of ownership than whites, even a situation in which blacks have a lower probability of ownership and yet put a larger portion of their wealth into housing is paradoxical. Two related hypotheses are plausible. The first revolves around the notion of discrimination. Due to discrimination in the financial markets, when blacks buy a home, they are forced to make larger down-payments. Further, because of housing market discrimination, blacks tend to move less often than whites. Thus, they do not continually re-finance as whites tend to do. Rather they concentrate on repairing and improving their existing housing. All of these factors would cause blacks to put more of their wealth into housing. In addition, while there may be discrimination in the housing market, it may be worse elsewhere—for example, the business community. Hence, even with discrimination, housing may be the only market available for investment.

The other explanation is tastes, broadly defined as due to something in the sociological-historical background of blacks. For a variety of reasons, blacks may view owning a house as more important than do whites. It may, for example, be seen as something of a status symbol. Or, blacks may view a house as a more secure investment than financial assets. Finally, as mentioned earlier, blacks tend to have different kinds of personal contacts as a result of past business and residential segregation. In his conversations, a black is less likely to have any financial discussions and is likely to remain ignorant of many possibilities. In any case, the discrimination and taste hypotheses are not independent, and both no doubt play an important role in this problem of wealth accumulation of black and white Americans.

#### CONCLUSION

Most previous studies of the black economic position have concentrated on current flow variables, largely because good micro-data on stocks of assets and liabilities have not been available. It is hoped that our work with the Survey of Economic Opportunity will help fill this void.

Our tabulations give an overall view and lay the foundation for the remainder of the work. Perhaps most important from this section is the conclusion that blacks and whites tend to invest their wealth differently, with blacks putting relatively more into consumer durables, especially housing. This led into the work on housing market discrimination in general and the Kain and Quigley work in particular. In this regard, at least some doubt has been cast on previous results and some insight into the effect of wealth considerations has been gained.

Further research could take many forms. Comparisons between regions (especially North-South) and central city versus suburbs would be interesting. Non-linearities definitely deserve to be investigated. While rates of return are beyond the scope of the present paper, they should be investigated in any future comprehensive research. Finally, as mentioned earlier, the logical extension of

this study would be the formulation of a complete simultaneous model. This paper has shown that wealth considerations are quite important, and their omission can lead to deceptive results. Our approach should provide a useful framework for future analysis.

#### APPENDIX

The 1967 Survey of Economic Opportunity is the data source for this paper. In 1966 and 1967, SEO's were conducted for the Office of Economic Opportunity by the Bureau of the Census. The SEO contains much of the information collected in the annual February-March Current Population Survey (CPS) plus other financial and demographic information usually obtained only in the decennial census years. Most important, for the purposes of this paper, it also included a relatively detailed breakdown of family assets and liabilities.

The SEO sample of 30,000 households consists of two parts. The first is a national self-weighting sample of 18,000 households, drawn in the same way as the CPS. In addition, in order to obtain better information concerning the poor, especially blacks, 12,000 other households were drawn from areas with large non-white populations. Essentially the same households were interviewed and the same questions asked in both survey years. A household, in the Survey, consists of an address. Within each household, there may be many interview units, which are essentially families; the interview unit was the basic unit of observation in this paper. The data used here was taken from the 1967 tape of the entire 30,000 observations. Nine hundred observations, 400 blacks and 500 whites, were drawn randomly from among those residing in SMSA's. Those units which did not report one or more of the categories of their assets or liabilities were eliminated from our sample, since no imputations were made in the Survey.