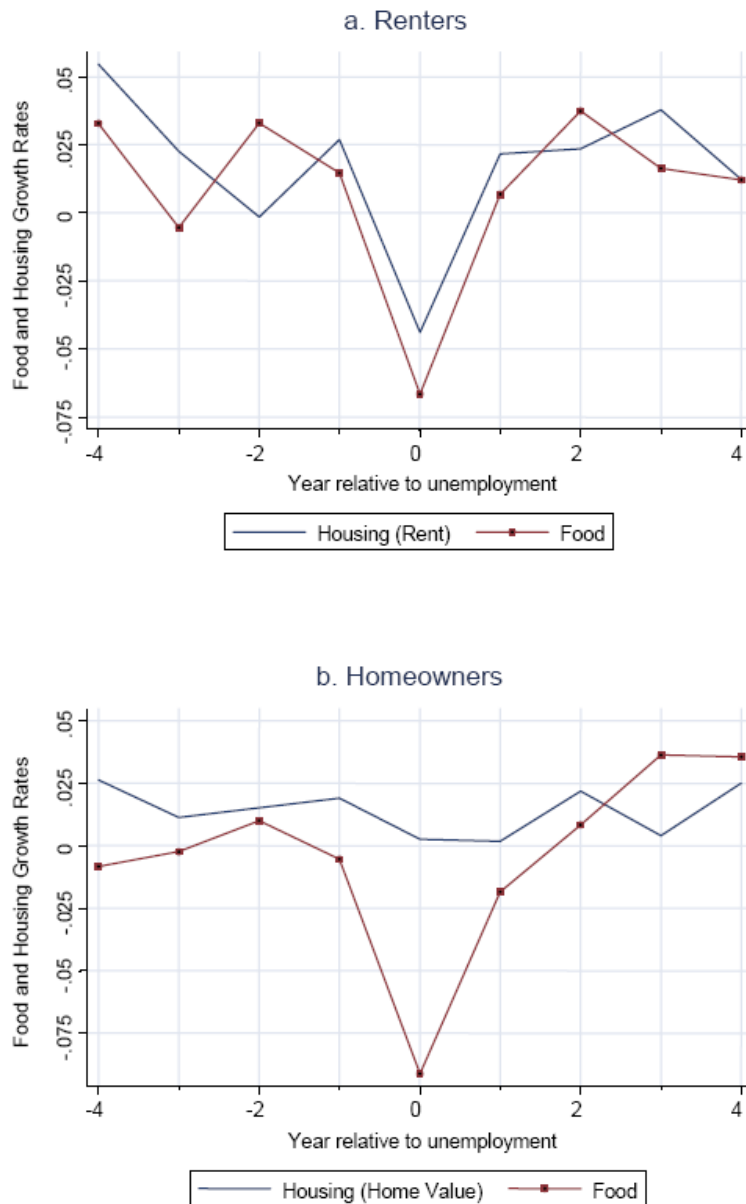


FIGURE II
Event Study of Consumption Around Unemployment Shocks

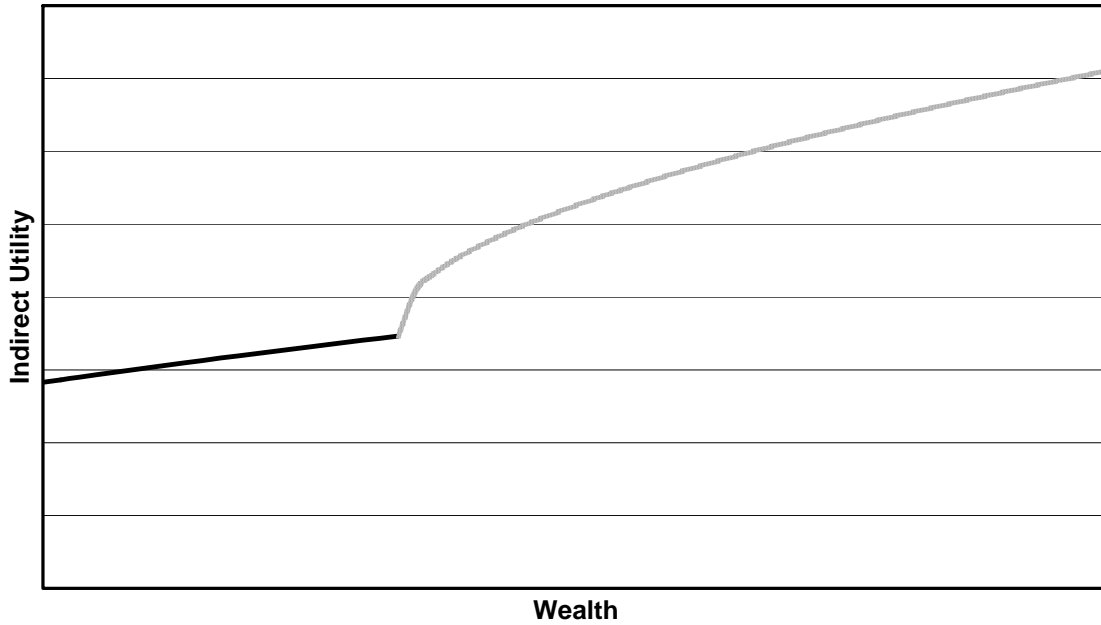


NOTE— These figures plot real annual growth rates of food and housing consumption (changes in log consumption) from year $t-1$ to year t . The year of job loss is normalized to $t=0$ for all individuals. The sample for Figure IIa includes households who rented in year -1 . The sample for Figure IIb includes households who owned a house in year -1 . See the data appendix for sample definitions and construction of growth rates.

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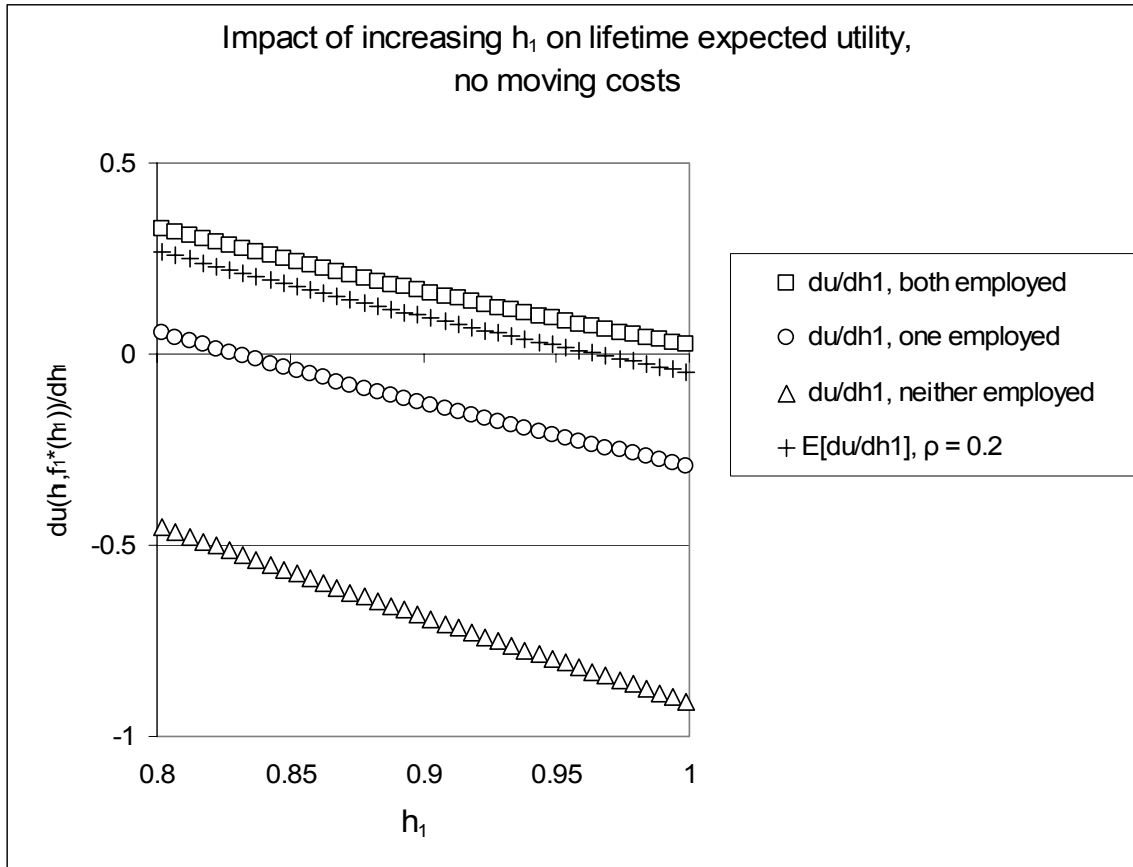
Figure 1:

**Indirect Utility of Wealth in the Second Period
Given Housing Consumption in the First Period**



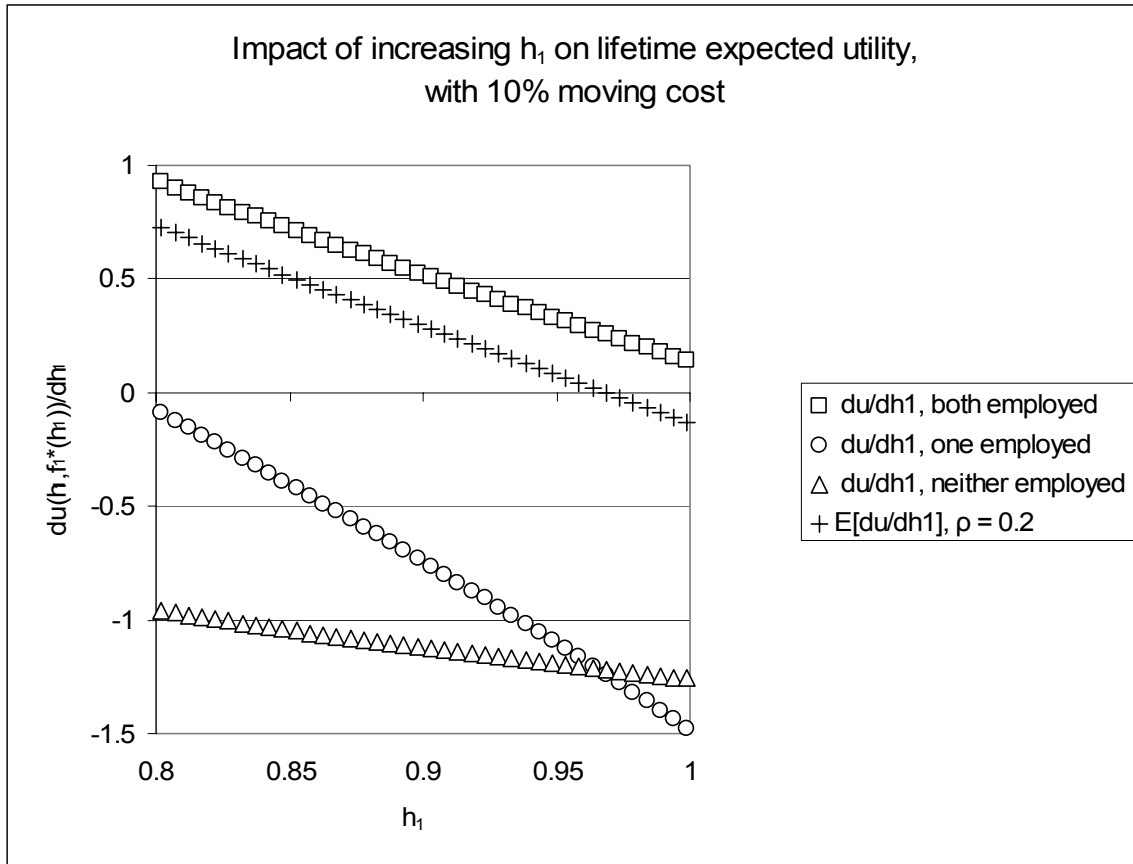
Notes: This figure plots the indirect utility in the second period, assuming that wealth is optimally allocated between food and housing. Not to scale.

Figure 2:



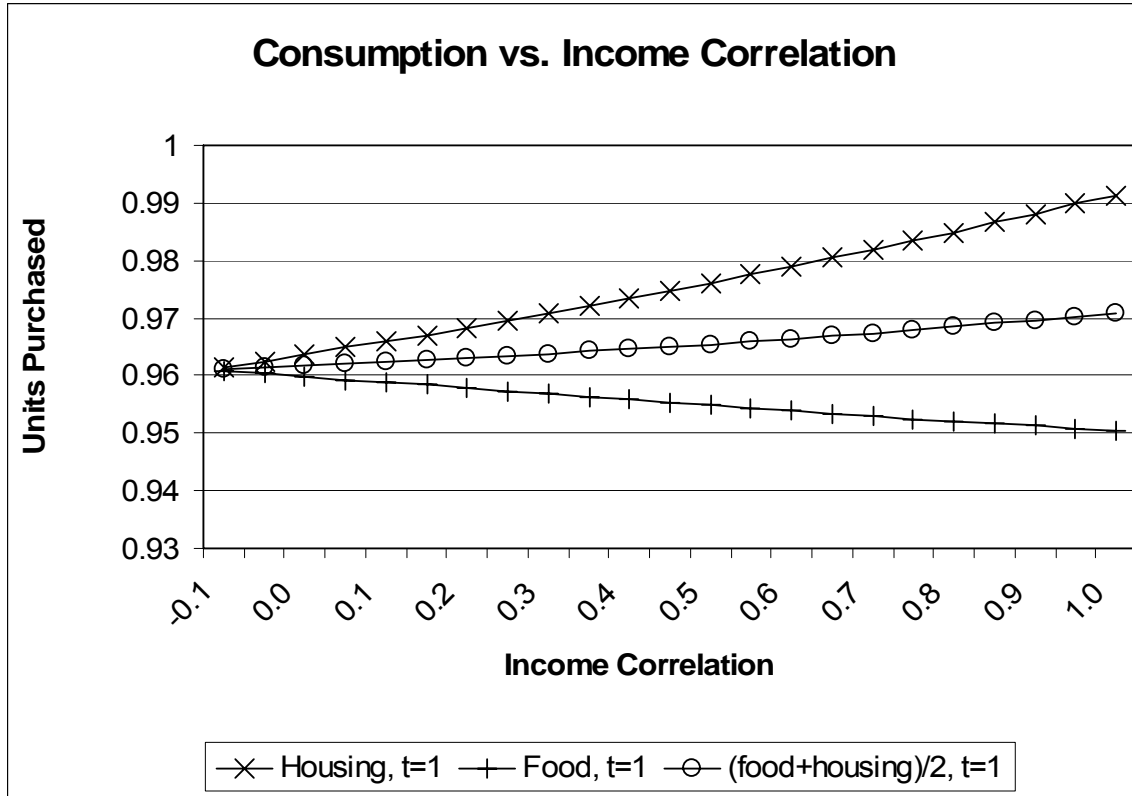
Notes: This figure plots the marginal lifetime utility of first-period housing consumption against first-period housing consumption. There are no moving costs, so $k=0$. First-period income, $Y_1=2$; second period income for a given spouse is either $Y_2^E=1$ with probability $1-p=1-q=0.9$ or $Y_2^U=0.5$ with probability $p=q=0.1$. As a result, total household second-period income is 2, 1.5, or 1. The correlation of the household's unemployment shocks is $\rho=0.2$. Lifetime utility is given as the sum of log food and log housing consumption in periods 1 and 2.

Figure 3:



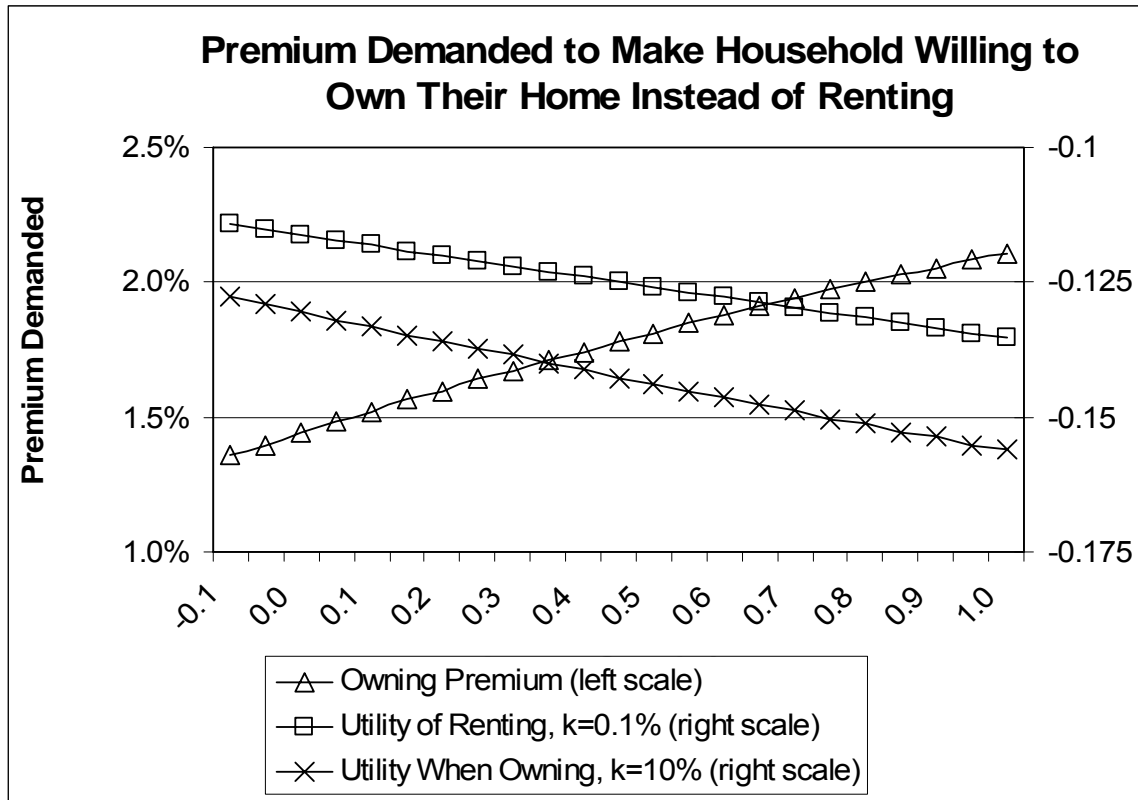
Notes: This figure plots the marginal lifetime utility of first-period housing consumption against first-period housing consumption, h_1 . The cost of adjusting housing consumption is 10% of h_1 . First-period income, $Y_1=2$; second period income for a given spouse is either $Y_2^E=1$ with probability $1-p=1-q=0.9$ or $Y_2^U=0.5$ with probability $p=q=0.1$. The correlation of the household's unemployment shocks is $\rho=0.2$. As a result, total household second-period income is 2, 1.5, or 1. Lifetime utility is given as the sum of log food and log housing consumption in periods 1 and 2. Given these parameters, it is optimal to adjust housing consumption in the second period only if both spouses become unemployed within the range of values for h_1 shown.

Figure 4:



Notes: This figure plots the optimal quantity of consumption against the correlation of spouses' unemployment events, ρ . The cost of adjusting housing consumption is 10% of h_1 . First-period income, $Y_1=2$; second period income for a given spouse is either $Y_2^E=1$ with probability $1-p=1-q=0.9$ or $Y_2^U=0.5$ with probability $p=q=0.1$. As a result, total household second-period income is 2, 1.5, or 1. Lifetime utility is given as the sum of log food and log housing consumption in periods 1 and 2. Given these parameters, it is optimal to adjust housing consumption in the second period only if both spouses become unemployed. First-period housing consumption, h_1 , is increasing in ρ , while first-period food consumption, f_1 , is decreasing in ρ . Total consumption, h_1+f_1 , is increasing in ρ .

Figure 5



Notes: The cost of adjusting housing consumption is 10% of h_1 . First-period income, $Y_1=2$; second period income for a given spouse is either $Y_2^E=1$ with probability $1-p=1-q=0.9$ or $Y_2^U=0.5$ with probability $p=q=0.1$. As a result, total household second-period income is 2, 1.5, or 1. Lifetime utility is given as the sum of log food and log housing consumption in periods 1 and 2. Given these parameters, it is optimal to adjust housing consumption in the second period only if both spouses become unemployed. The “x” and “□” lines plot the relationship between the correlation of household labor income, ρ , and the utility. These lines differ in the cost of adjusting housing consumption, so that the higher moving cost corresponds to the lower utility. The higher moving cost is meant to represent as the case of a homeowner; the lower moving cost represents the case of a renter. The “ Δ ” line represents the demanded ownership premium, the percent by which wages in all periods and states would have to be increased to induce the agent to accept the higher moving cost over the lower moving cost. A higher premium suggests that a household is less willing to own a home and requires greater compensation for doing so.

Table 2.1:
Model Calibration for Various Parameters

moving cost	p,q	Y_2^u/Y_2^e	h_1^*	f_1^*	move if both unemployed	move if one unemployed	Move if neither unemployed	dU/df_{uu}	dU/df_{eu}	dU/df_{ee}	dU/dh_{uu}	dU/dh_{eu}	dU/dh_{ee}	$dh_1/d\phi$	$df_1/d\phi$	$d(f_1+h_1)/d\phi$
.1%	10%	50%	0.964	0.965	Yes	Yes	Yes	-0.83	-0.24	0.07	-0.83	-0.24	0.07	-	-	-
1%	10%	50%	0.997	0.964	Yes	Yes	No	-0.91	-0.27	0.08	-0.96	-0.32	0.09	+	-	-
5%	10%	50%	0.994	0.963	Yes	Yes	No	-0.98	-0.30	0.09	-1.11	-0.40	0.11	+	-	-
10%	10%	50%	0.968	0.958	Yes	No	No	-1.00	-0.61	0.14	-1.22	-1.24	0.26	+	-	+
20%	10%	50%	0.967	0.957	Yes	No	No	-1.22	-0.59	0.14	-1.68	-1.21	0.27	+	-	+
50%	10%	50%	0.939	0.939	No	No	No	-4.42	-0.40	0.22	-8.83	-0.80	0.44	-	-	-
10%	.01%	50%	1.000	1.000	Yes	No	No	-1.22	-1.00	0.00	-1.44	-2.00	0.00	+	-	+
10%	5%	50%	0.982	0.977	Yes	No	No	-1.10	-0.77	0.08	-1.32	-1.55	0.15	+	-	+
10%	10%	50%	0.968	0.958	Yes	No	No	-1.00	-0.61	0.14	-1.22	-1.24	0.26	+	-	+
10%	15%	50%	0.957	0.940	Yes	No	No	-0.92	-0.48	0.19	-1.14	-1.00	0.35	+	-	+
10%	20%	50%	0.946	0.925	Yes	No	No	-0.85	-0.38	0.24	-1.07	-0.81	0.42	+	-	+
10%	30%	50%	0.927	0.895	Yes	No	No	-0.73	-0.22	0.32	-0.95	-0.51	0.56	+	-	+
10%	10%	20%	0.979	0.908	Yes	Yes	No	-3.71	-0.54	0.22	-4.27	-0.79	0.28	-	-	-
10%	10%	30%	0.984	0.932	Yes	Yes	No	-2.34	-0.48	0.16	-2.74	-0.70	0.21	-	-	-
10%	10%	40%	0.958	0.943	Yes	No	No	-1.43	-0.79	0.18	-1.69	-1.60	0.34	+	-	+
10%	10%	50%	0.968	0.958	Yes	No	No	-1.00	-0.61	0.14	-1.22	-1.24	0.26	+	-	+
10%	10%	60%	0.977	0.970	Yes	No	No	-0.70	-0.45	0.10	-0.88	-0.91	0.19	+	-	+
10%	10%	70%	0.977	0.977	No	No	No	-1.12	-0.28	0.09	-2.23	-0.56	0.17	-	-	-

This table presents a summary of calibration results for various parameter values. All rows assume $Y_1=2, Y_2^E=1$. Lifetime utility is given as the sum of log food and log housing consumption in periods 1 and 2. The first three rows show k, p and q , and Y_2^U , respectively. Given these parameter values, the optimal levels of initial housing and food consumption are given in the fourth and fifth rows. The sixth, seventh, and eighth rows show under what circumstances it will be optimal to move. The ninth through fourteenth rows show the impact of changes in initial food or housing consumption on utility in various states of the world. The final three columns show how increasing the correlation of unemployment (introducing a mean-preserving spread in risk) impacts consumption. A "+" indicates increased consumption in the face of increased risk. A "-" in the final column indicates an aggregate precautionary saving motive.

Table 1.A: IPUMS Summary statistics

Variable	Owners Only		Renters Only	
	Mean	Std. Dev.	Mean	Std. Dev.
Husband and wife report same occupation (1950 definitions)	0.096	0.294	0.096	0.295
Husband and wife report same industry (1950 definitions)	0.141	0.348	0.127	0.333
House value; monthly rent	175,893	129,027	666	332
Family income	91,252	59,064	61,777	39,942
Husband's imputed unemployment rate (p)	0.065	0.022	0.071	0.025
Wife's imputed unemployment rate (q)	0.135	0.038	0.147	0.041
Husband's share of income	0.621	0.170	0.598	0.181
Imputed probability of moving	0.148	0.083	0.196	0.093
Sample average probability of moving	0.112	0.315	0.338	0.473
Number of observations	231,598		48,464	

Notes: Data are from the 1980, 1990, and 2000 IPUMS. Sample construction is detailed in Appendix Table A. Dollar amounts are in real (2000) dollars. The number of observations for the "same industry" row is 240,680 for owners, and 59,987 for renters. The sample size differs because a larger fraction of the IPUMS sample reports their industry than do their occupation.

Table 1.B: SIPP Summary statistics

Variable	Mean	Std. Dev.
Husband and wife report same occupation	0.032	0.155
Husband and wife report same industry	0.094	0.292
Family income	69,570	54,164
Husband's unemployment rate	0.086	0.280
Wife's unemployment rate	0.251	0.434

Notes: Data are from the April 1996 panel of the Survey of Income and Program Participation, which covers 48 months between April 1996 and March 2000. Sample construction is detailed in Appendix Table A.

Table 2: Top 20 Occupations by Percent of Couples Who Share the Same Occupation

	(1)	(2)	(3)
Occupation, 1950 basis	Same Occ. Share of the Occ.	Occ. Share of Sample	Rate of Same Occ. With Random Sorting
1 Physicians and Surgeons	15.05%	0.51%	0.25%
2 Teachers	11.91%	5.24%	2.16%
3 Operative and Kindred Workers	11.87%	6.55%	3.61%
4 Managers, Officials, and Proprietors	11.27%	11.49%	6.14%
5 Lawyers and Judges	10.17%	0.81%	0.37%
6 Professors (subject matter unspecified)	7.62%	0.58%	0.29%
7 Managers & Superintendents, building	7.60%	0.37%	0.19%
8 Professional, technical & kindred workers	7.28%	3.15%	1.63%
9 Real estate agents and brokers	6.82%	0.83%	0.42%
10 Members of the armed services	5.90%	0.64%	0.13%
11 Salesmen and sales clerks	5.52%	4.25%	2.10%
12 Clerical and kindred workers	4.97%	8.68%	3.29%
13 Janitors and sextons	4.81%	1.46%	0.60%
14 Editors and reporters	4.47%	0.39%	0.19%
15 Cooks, except private household	4.28%	0.97%	0.47%
16 Policemen and detectives	3.72%	0.78%	0.17%
17 Mail carriers	3.60%	0.34%	0.12%
18 Insurance agents and brokers	3.31%	1.10%	0.54%
19 Stock and bond salesmen	3.30%	0.28%	0.13%
20 Service workers, except private household	3.00%	0.56%	0.23%

Notes: Only occupations comprising at least 0.25 percent of the sample are shown in this table. Column (1) presents the ratio of the number of same occupation couples in an occupation to the number of couples where either (or both) spouse has that occupation. Column (2) is the ratio of the number of couples where either (or both) spouse has that occupation to the total number of couples. Column (3) is the fraction of couples with one or both spouses in an occupation who would share an occupation if pairings were done at random (i.e. without regard to occupation). Data are from the 1980-2000 IPUMS.

Table 3: Probability of one or both spouses becoming unemployed at some point during a six-month window conditional on both initially employed, by whether the couple shares an occupation

	Probability no spouses unemployed during subsequent six months	Probability at most one spouse unemployed during subsequent six months	Probability both spouses unemployed at some point during subsequent six months	Probability husband becomes unemployed during subsequent six months	Probability wife becomes unemployed during subsequent six months	Unemploy- ment correlation	# of observations
Different Occupation	88.25	11.08	0.67	4.42	8.00	0.057	261,494
Same Occupation	90.38	8.15	1.47	3.96	7.13	0.237	8,642
Difference	2.13	-2.93	0.80	-0.47	-0.87	0.179	

Notes: The unit of observation is a couple \times month. The sample consists of married couples who both report being employed in one month and who either identify as having the same or different three-digit occupation codes. The table reports the fraction of households in each category where neither, one, or both spouses report having a unemployment spell during the subsequent six months. Data are from the April 1996 panel of the Survey of Income and Program Participation.

Table 4: Probability of moving over the next six months if neither, one, or both spouses become newly unemployed, for current homeowners

	No one unemployed	One newly unemployed	Two newly unemployed
P(moving)	2.18%	3.96%	9.73%
Marginal P(moving)		1.78%	5.77%
Number of observations	219,968	4,119	113

Notes: The unit of observation is a couple \times month. The sample consists of married couples who both report being employed in one month and then report themselves as neither unemployed, one unemployed, or both unemployed in the next month. The table reports the fraction of households in each category who move to a new home, and the number of people in each category. The probability of moving measures whether there will be at least one change of address during subsequent six months. Data are from the April 1996 panel of the Survey of Income and Program Participation.

Table 5: The effect of higher correlation in unemployment risk on log house value, for homeowners

LHS variable: log(house value)	(1)	(2)	(3)	(4)
Proxy for income correlation		Same Occupation		Same Industry
Same Occupation [I_p]	0.043	0.027	0.021	0.056
(Same Industry)	(0.004)	(0.003)	(0.004)	(0.003)
Husband's unemployment rate [p]	-6.026 (0.271)	-2.290 (0.227)	1.516 (0.375)	1.120 (0.502)
Husband's unemployment rate ² [p^2]	23.872 (1.580)	6.804 (1.304)	-8.089 (2.086)	-4.430 (2.927)
Wife's unemployment rate [q]	-0.098 (0.205)	0.455 (0.172)	0.213 (0.293)	-1.225 (0.282)
Wife's unemployment rate ² [q^2]	-1.234 (0.707)	-1.922 (0.586)	0.460 (1.027)	4.636 (0.910)
Husband's unemployment rate \times Wife's rate [$p \times q$]	-11.313 (1.496)	-6.554 (1.239)	-2.644 (1.282)	-2.738 (1.700)
Income share of husband [s]	-0.006 (0.007)	0.107 (0.006)	0.092 (0.006)	0.110 (0.006)
Log(family income)	0.625 (0.003)	0.390 (0.002)	0.357 (0.002)	0.397 (0.002)
Demographic controls?	No	Yes	Yes	Yes
MSA \times year dummies?	No	Yes	Yes	Yes
Husband and Wife occupation (industry) dummies?	No	No	Yes	Yes
Adjusted R ²	0.2976	0.3180	0.3370	0.3313
Number of observations:	231,598	231,598	231,598	240,680

Notes: Left-hand-side variable is log(house value). All specifications include year dummies. Sample consists of married homeowner households where both spouses work full-time. More details are in Appendix Table A. Demographic controls in columns (2) – (4) include dummies for: the number of persons in the household, the number of kids in the household, the educations of the husband and wife, and age brackets for the head and spouse. Data are from the 1980-2000 IPUMS.

Table 6: The effect of same occupation on log house value, estimated separately for various sample splits, for homeowners

<u>Splits by:</u>			
<u>Decade:</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>
Same occupation	0.017 (0.007)	0.023 (0.006)	0.017 (0.007)
N	61,085	94,879	75,634
<u>Husband's Age</u>	<u>≤ 45</u>		<u>46-64</u>
Same occupation	0.022 (0.005)		0.017 (0.006)
N	124,351		102,847
<u>Education</u>	<u>Some college for ≥1 spouse</u>		<u>No college for either spouse</u>
Same occupation	0.016 (0.004)		0.034 (0.009)
N	166,915		64,683
<u>Family Income</u>	<u>Above median</u>		<u>Below median</u>
Same occupation	0.005 (0.004)		0.033 (0.007)
N	130,018		101,580
<u>Husband's income share</u>	<u>Between 0.4 and 0.8</u>		<u>Not between 0.4 and 0.8</u>
Same occupation	0.024 (0.004)		0.017 (0.009)
N	177,629		53,969

Notes: This table reports the estimated coefficient and standard error on the “Same Occupation” dummy variable from a regression of log house value on the “same occupation” dummy, plus controls. The regression is run separately (e.g.: all variables are fully interacted) for each of the samples in the splits. The samples are drawn from the 1980-2000 IPUMS. These regressions use the same specification as in column 3 of table 3.5, including unemployment risk controls, husband’s income share, log family income, demographic dummies, occupation dummies for both husband and wife, and MSA × year dummies (MSA dummies alone in the single-decade regressions). Median income is calculated by year. The medians are (in real \$2000): 1980 – 68,325; 1990 – 72,831; 2000 – 80,000. “Some college” means at least one of the two spouses have had at least one year of post-high school education. The “income share” cutoffs of 0.4 and 0.8 are approximately one standard deviation above and below the mean of 0.61. The number of observations in each row adds up to 231,598, except for the “Husband’s Age” specification, which excludes the “65+” category (4,400 observations).

Table 7: The effect of same occupation on the demand for housing and homeownership, and the impact of effective moving costs

	(1)	(2)	(3)	(4)	(5)	(6)
LHS variable:	Log(House Value)		Log(Rent)		Own = 1	
Sample:	Homeowners		Renters		Renters and Homeowners	
Same Occupation	0.021 (0.004)	0.034 (0.007)	-0.002 (0.017)	-0.050 (0.034)	-0.014 (0.003)	-0.027 (0.005)
Imputed P(moving)		-0.933 (0.069)		0.718 (0.265)		-0.624 (0.045)
Same occupation × Imputed P(moving)		-0.088 (0.039)		0.248 (0.156)		0.084 (0.026)
Log(family income)	0.357 (0.002)	0.358 (0.002)	0.201 (0.009)	0.200 (0.009)	0.177 (0.002)	0.178 (0.002)
Demographic controls?	Yes	Yes	Yes	Yes	Yes	Yes
MSA × year dummies?	Yes	Yes	Yes	Yes	Yes	Yes
Occ. dummies for each spouse	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.3370	0.3366	0.1310	0.1312	0.1414	0.1423
Number of Observations	231,598	231,598	58,464	58,464	290,062	290,062

Notes: Sample is the 1980-2000 IPUMS. These regressions use the same set of controls as in column 3 of table 3.5, including unemployment risk controls, husband's income share, log family income, demographic dummies, occupation dummies for both husband and wife, and MSA × year dummies. The probability of moving, in even numbered columns, is imputed as the fraction of households in an age × marital status × presence of kids cell (excluding the household that the moving rate is being imputed to) that moved over the prior year. The reported coefficients for owners in columns (1) and (2) and their analogs for renters in (3) and (4) are statistically significantly different from each other. Columns (5) and (6) report the results from a linear probability model.

Table 8: The effect of unemployment insurance on the relationship between same occupation and house value, for homeowners

LHS variable: log(house value)	(1)	(2)	(3)
Functional form of UI replacement rate (RR)	Dummy for bottom decile	Dummy for bottom quartile	Linear
Same Occupation \times Husband's income share \times Wife's share [$I_p \times s \times (1-s)$]	0.077 (0.019)	0.076 (0.020)	0.203 (0.065)
Same Occupation \times Husband's income share \times Wife's share \times RR	0.267 (0.079)	0.148 (0.056)	-0.323 (0.190)
Adjusted R ²	0.5539	0.5550	0.5568
Occupation dummies?	No	No	No
Same Occupation \times Husband's income share \times Wife's share [$I_p \times s \times (1-s)$]	0.049 (0.022)	0.057 (0.023)	0.036 (0.063)
Same Occupation \times Husband's income share \times Wife's share \times RR	0.084 (0.072)	0.027 (0.050)	0.056 (0.190)
Adjusted R ²	0.5662	0.5670	0.5682
Occupation dummies?	Yes	Yes	Yes

Notes: Robust standard errors, corrected for correlation by state \times year \times segment on the UI schedule, are in parentheses. Across the columns, UI segments are bottom decile/top 90 percent; bottom quartile/top 75 percent; and in the linear specification, the segments are the linear portions of the UI replacement schedule. Each spouse can be on one of three sections: the spouse is ineligible, the spouse's income is below or at the state benefits maximum; or the spouse's income is above the benefits maximum. Collectively, there are six possible combinations and five are populated with households in our data. The empty segment is both spouses having incomes above the benefits maximum. In addition to the variables reported above, all columns include controls for log family income, s , $s \times (1-s)$, $p \times s$, $q \times (1-s)$, $p^2 \times s$, $q^2 \times (1-s)$, (where s is the husband's share of household wage income and p and q are the husband's and wife's imputed unemployment rates, respectively) as well as each of the preceding variables interacted with the replacement rate measure. Each column also includes MSA \times year dummies, state \times year dummies, and controls for the number of persons in the household, number of children, educational attainment of the husband and wife, and age of the husband and wife. The bottom panel also includes occupation dummies for the husband and wife. Data are from the 1990 and 2000 IPUMS, with the UI replacement rate imputed based off of state of residence, year, and income of the husband and wife. RR is the income-weighted average of the husband's and wife's individual UI replacement rates. The sample average husband's share of income is 0.62. The number of observations is 156,285.

Appendix Table A: Sample Construction

Restriction	Number lost	Total remaining
<u>Data source: IPUMS</u>		
Original sample		2,778,194
Live in an MSA	1,016,455	1,761,767
Married	779,536	982,231
Husband and wife both age 25 or over	63,992	918,239
Listed occupations	20,499	897,740
Husband and wife both work full-time	572,470	325,270
8 or fewer people in household	1,513	323,757
Not a farm household	2,318	321,439
Family income above zero and not missing	113	321,326
Both husband and wife have income ≥ 0	1,160	320,166
Occupation not rare (contains > 200 persons/year)	17,806	302,360
Cell size for imputing probability of moving ≥ 30	185	302,175
House value or rent non-missing and > 0	12,113	290,062
<u>Data source: SIPP</u>		
Original sample (person \times month)		3,897,211
Married couple households \times month	3,117,752	779,459
Drop extended families	160,775	618,684
Reported occupation	127,711	490,973
Can follow employment status for six months	90,404	400,569
Employed in current month	130,433	270,136

Sources: 1980, 1990, and 2000 IPUMS; April 1996 panel of the SIPP

Figure 2.1: Total Expenditure

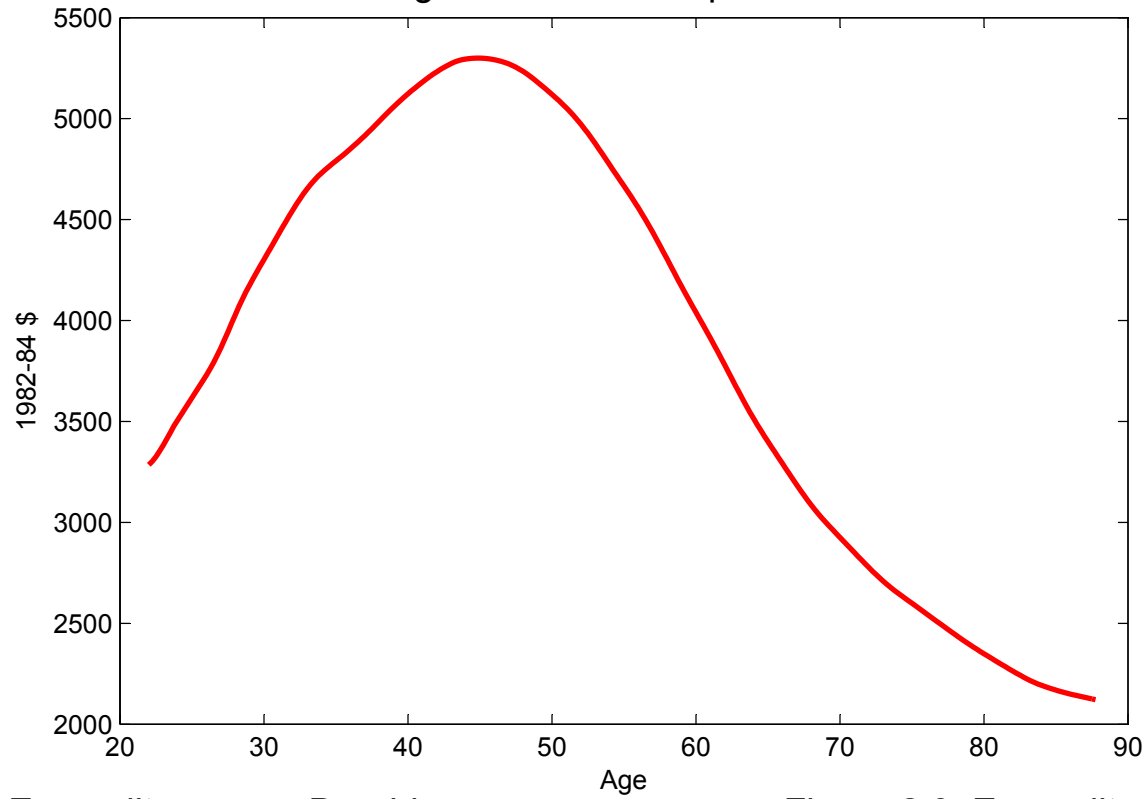


Figure 2.2: Expenditures non Durables

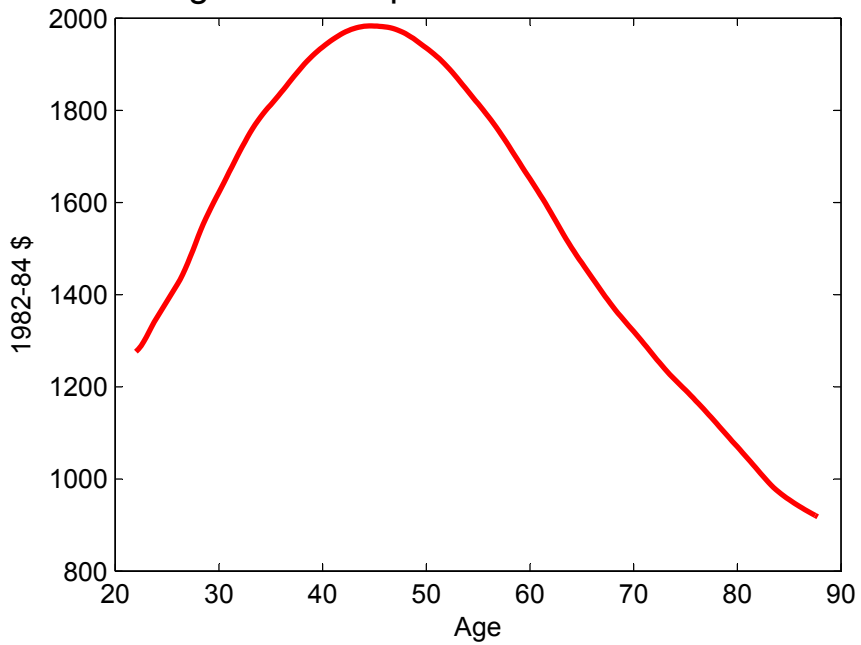


Figure 2.3: Expenditures Durables

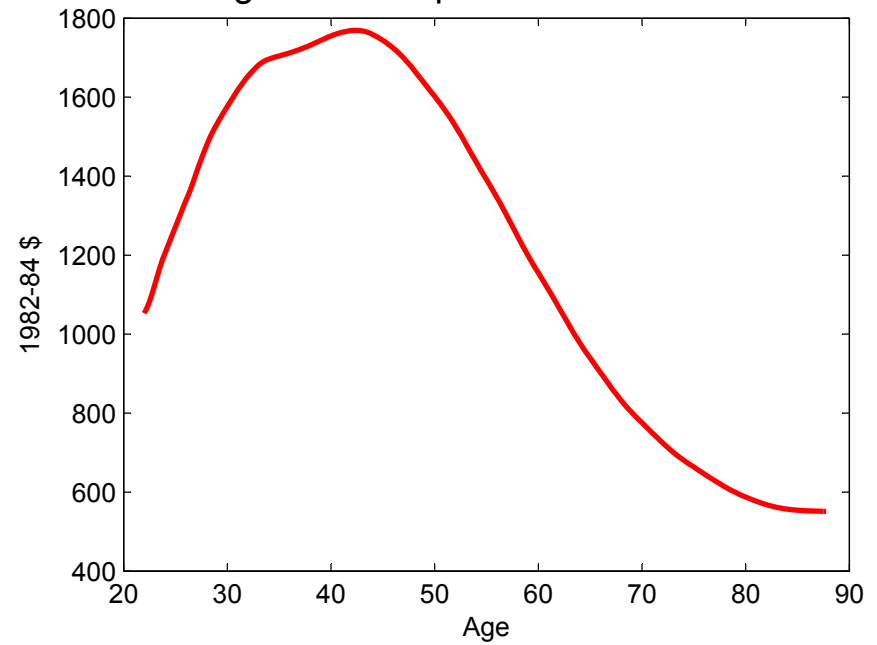


Figure 2.4: Total Expenditure, Adult Equivalent

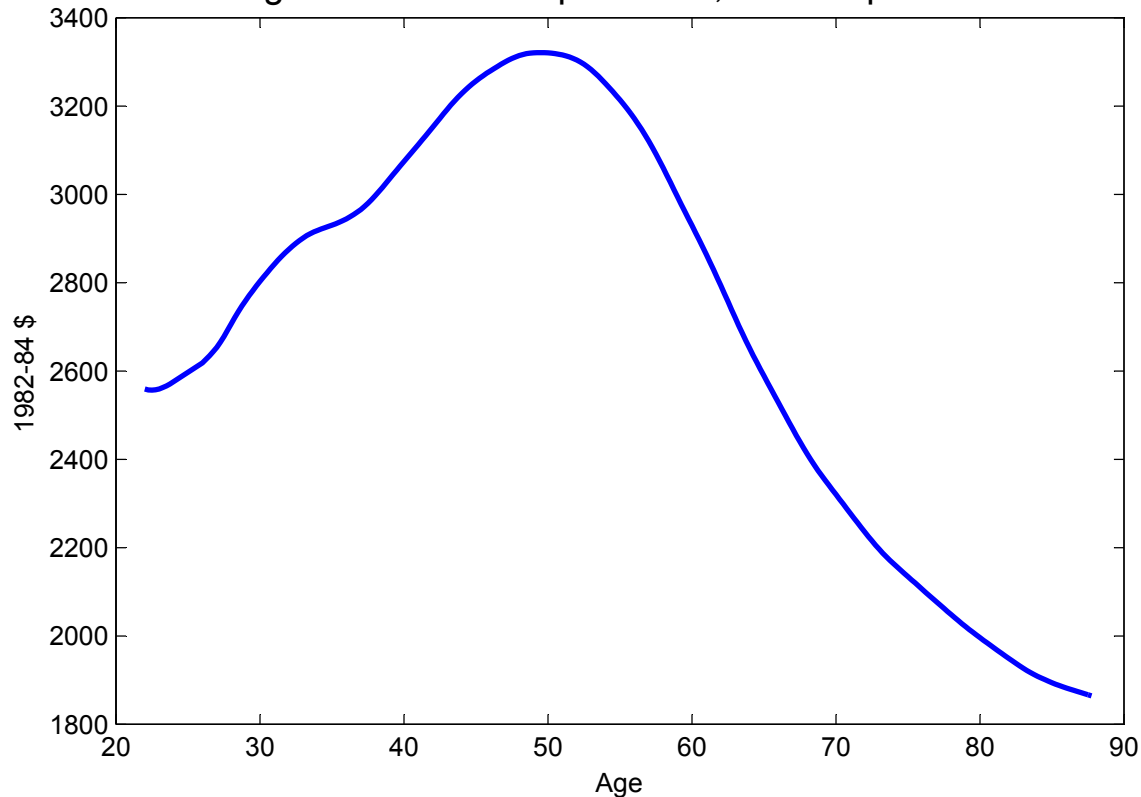


Figure 2.5: Expenditures non Durables, Adult Equivalent

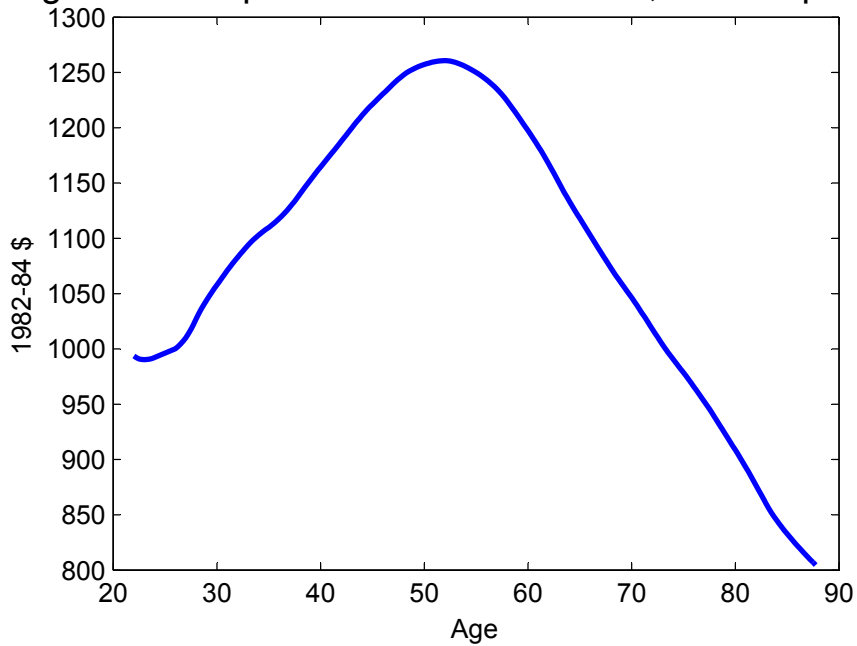


Figure 2.6: Expenditures Durables, Adult Equivalent

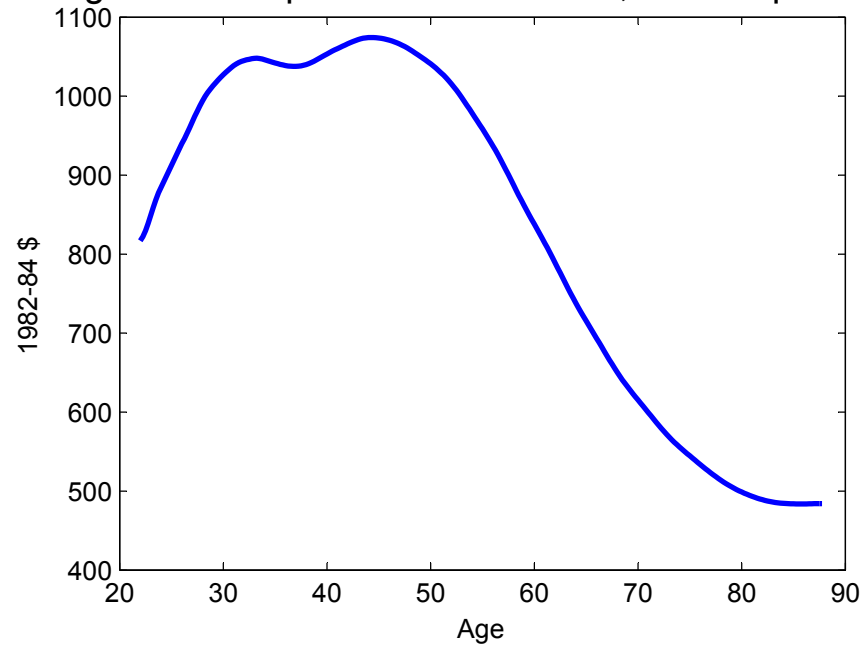


Figure 2.7: Households Net Worth, 1995 SCF

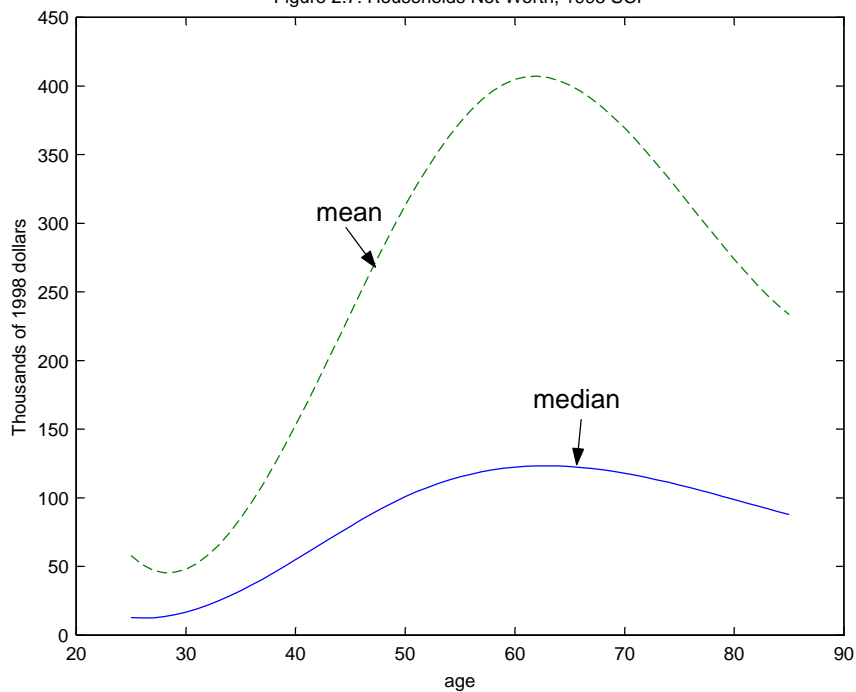


Figure 2.8: Households Assets Distribution by Wealth, 1995 SCF

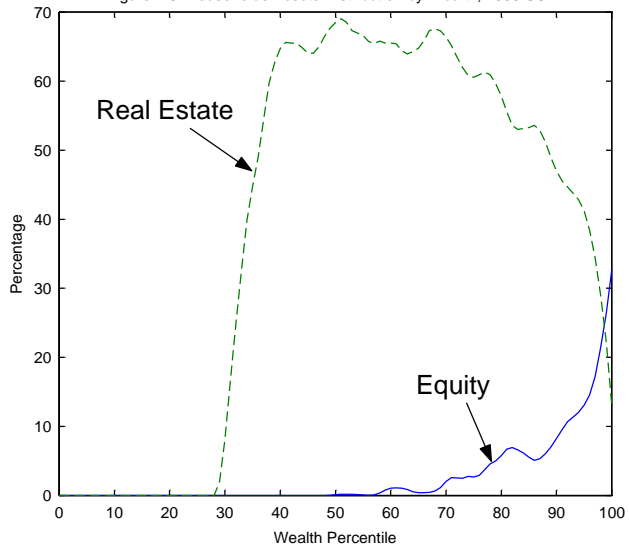


Figure 2.9: Median Households Assets, 1995 SCF

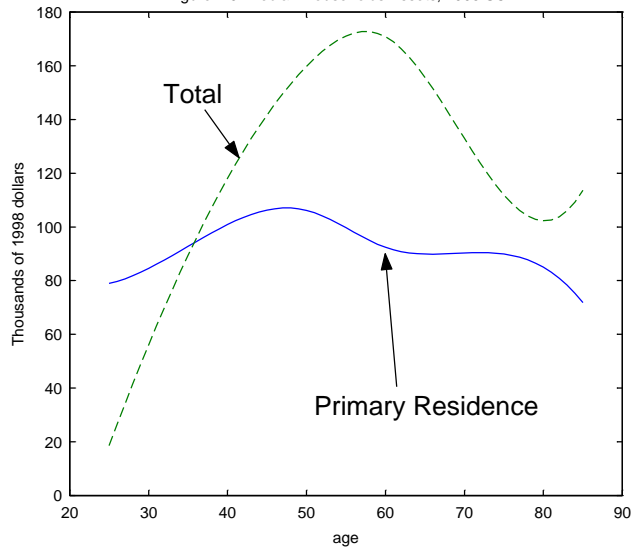


Figure 4.1: Conditional Survival Probabilities

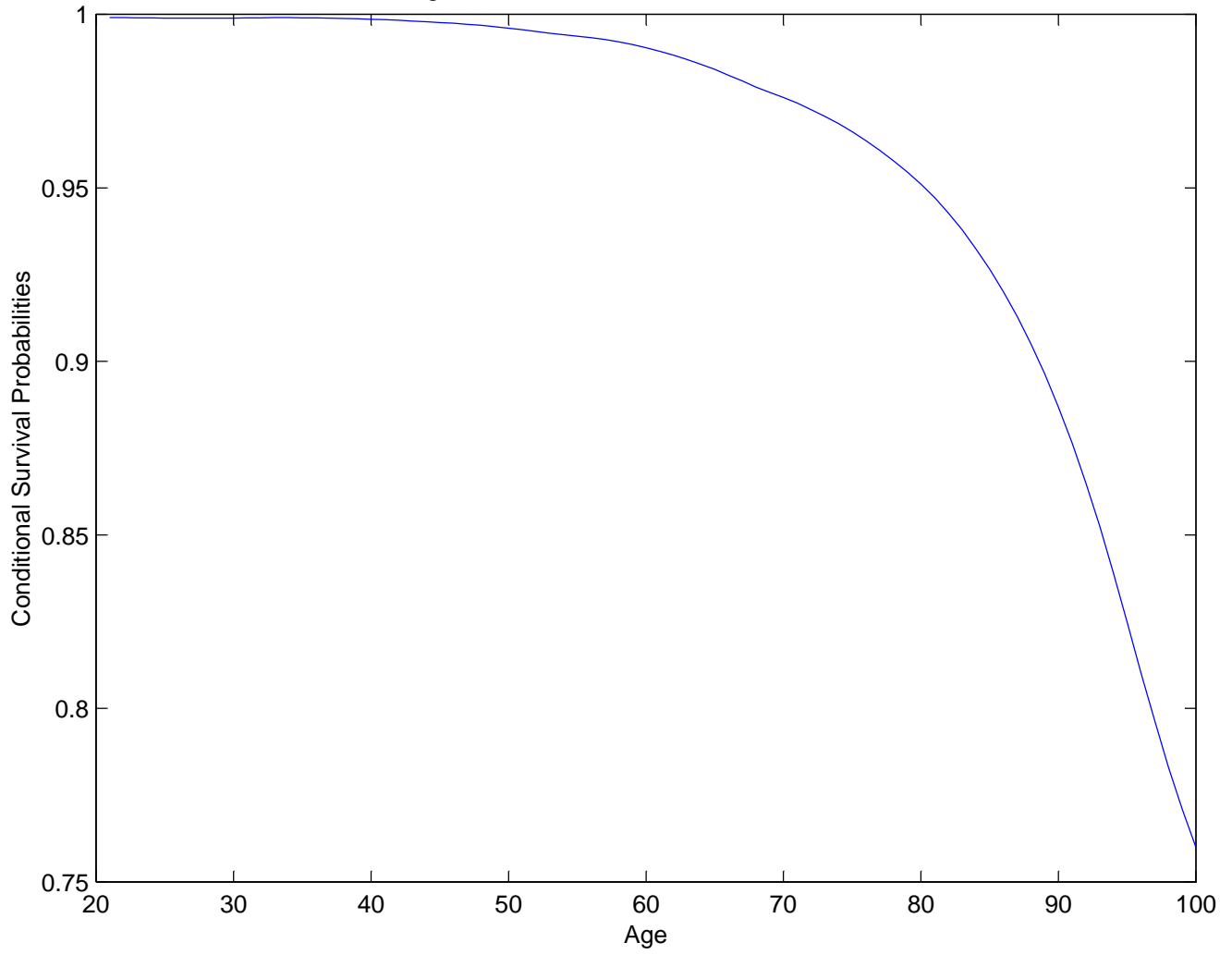


Figure 5.1: Life Cycle Pattern of Labor Income and Nondurable Consumption

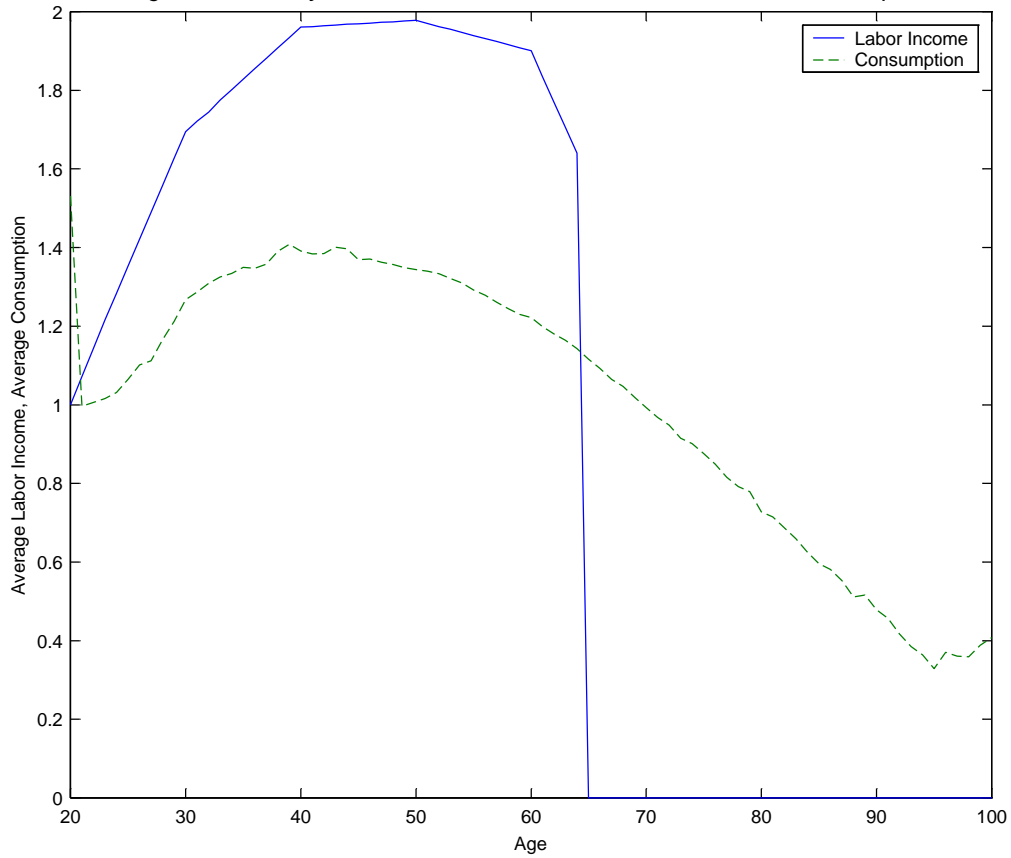


Figure 5.2: Life Cycle Pattern of Consumer Durables, Financial Wealth and Total Wealth

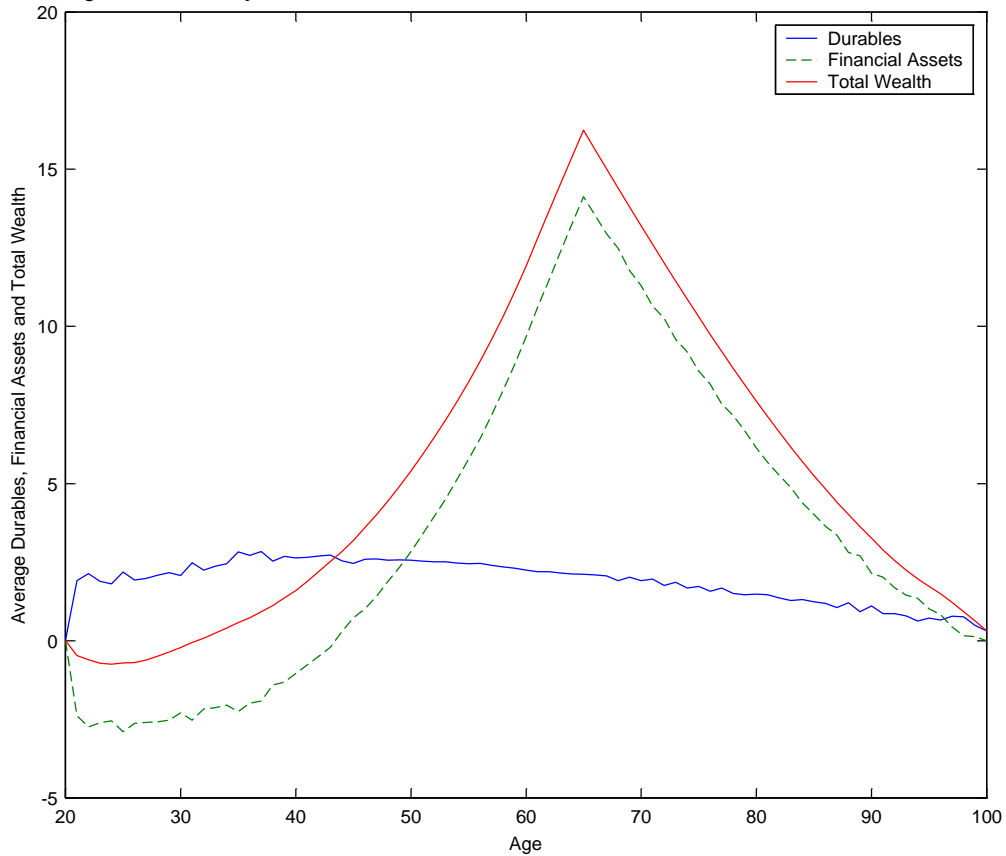


Figure 5.3: Average Stock of Durables

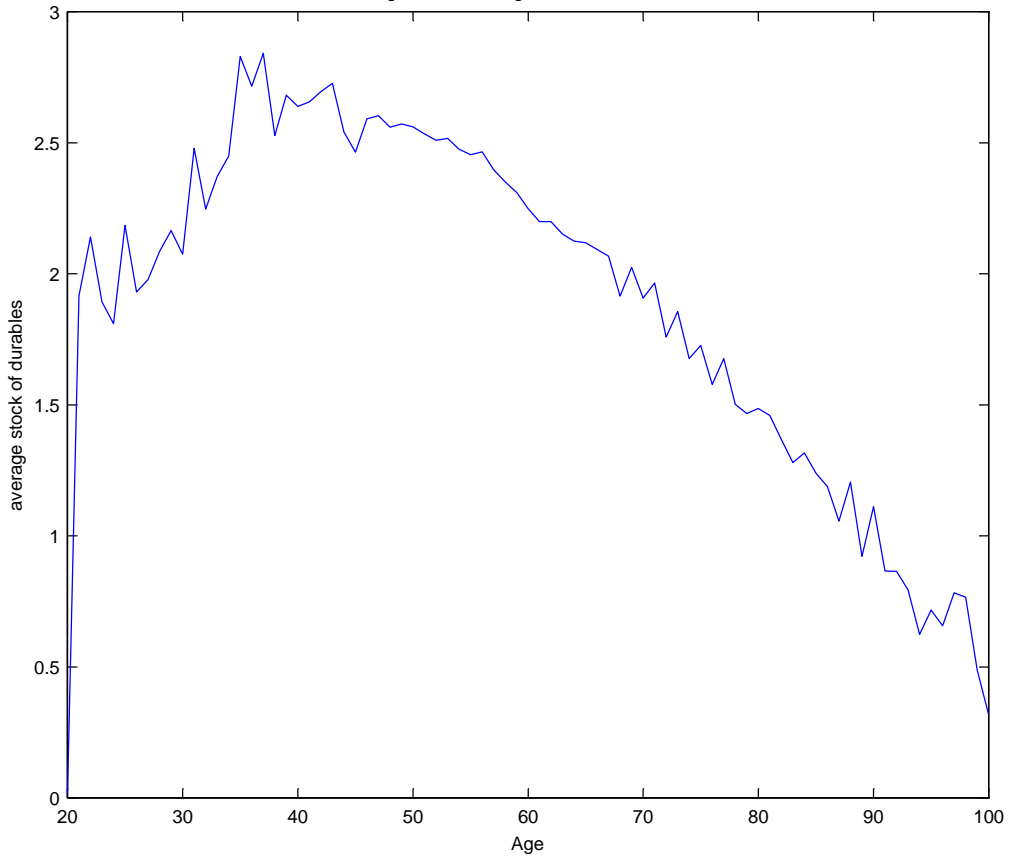


Figure 5.4: Average Expenditure on Durables

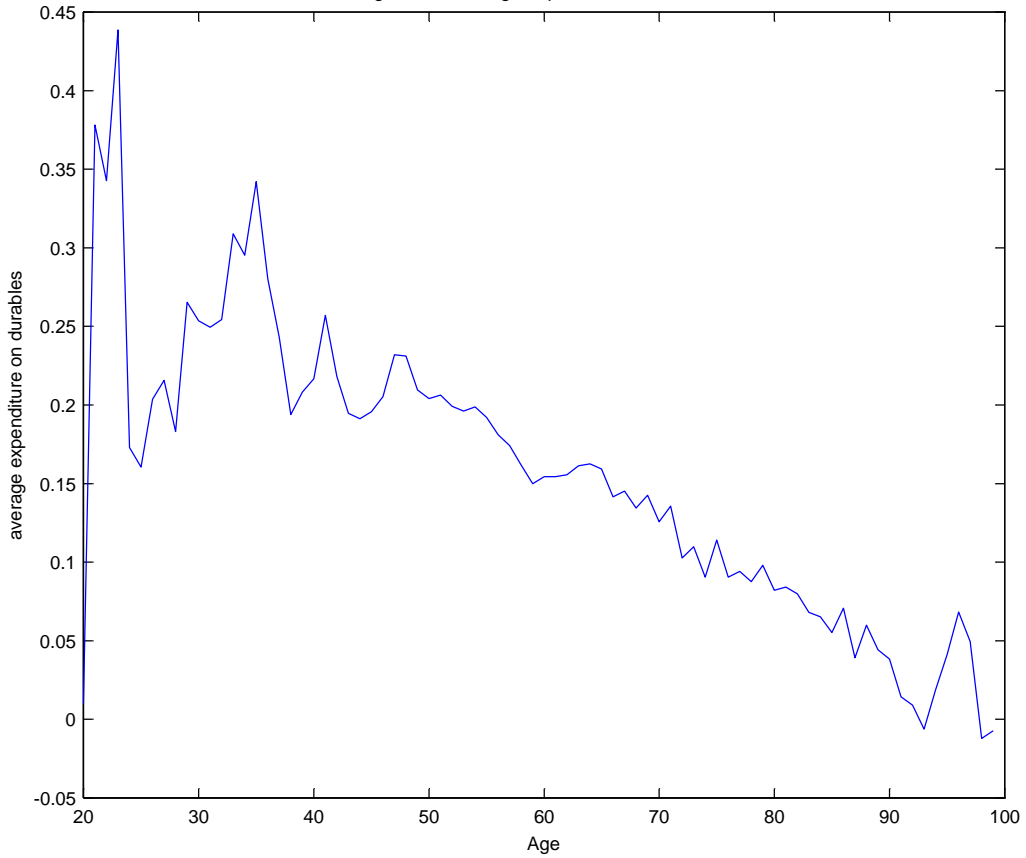


Figure 5.5: Some Simulated Life Cycle Consumption Profiles

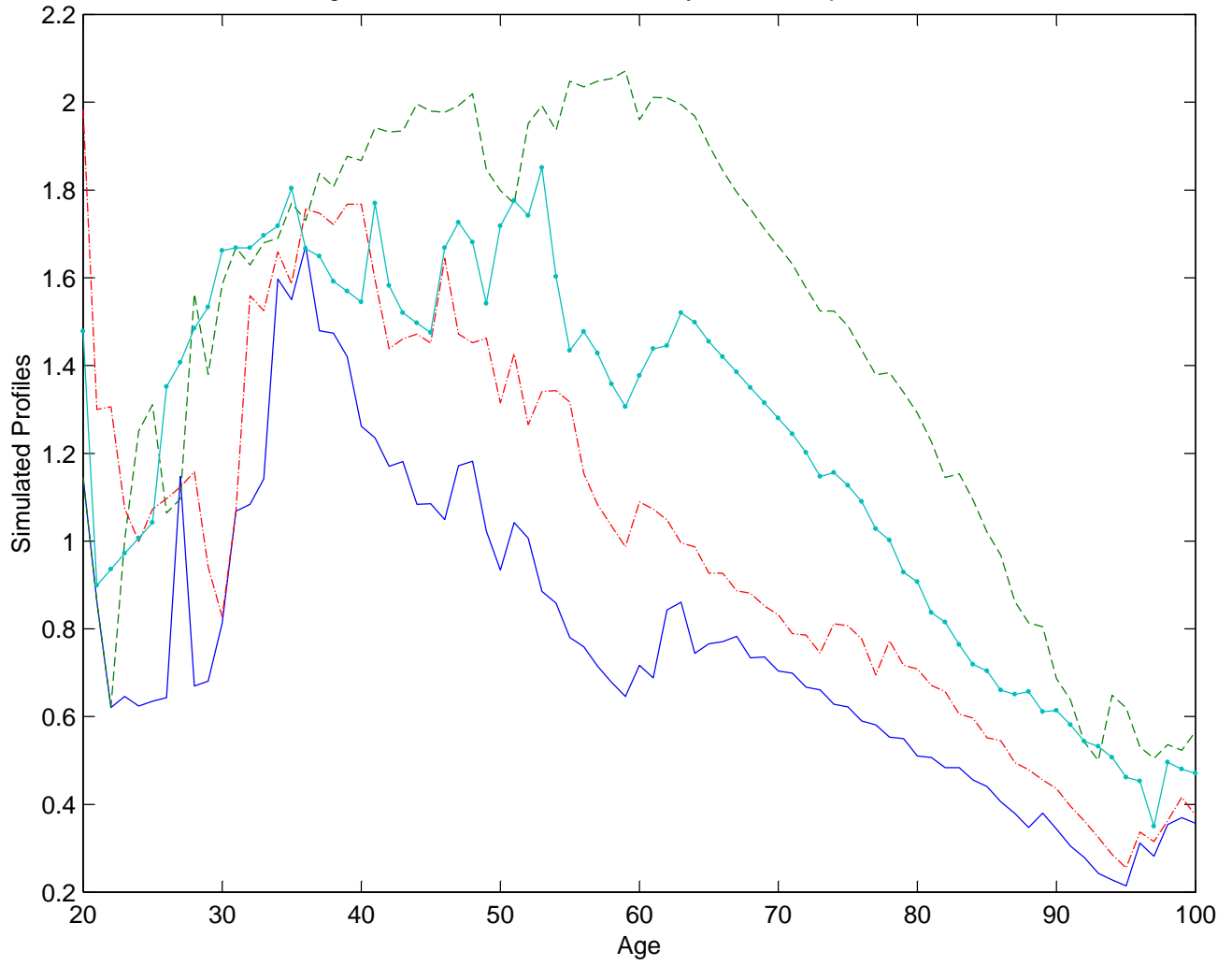


Figure 5.6: Life Cycle Pattern of Labor Income and Nondurable Consumption, no uncertainty

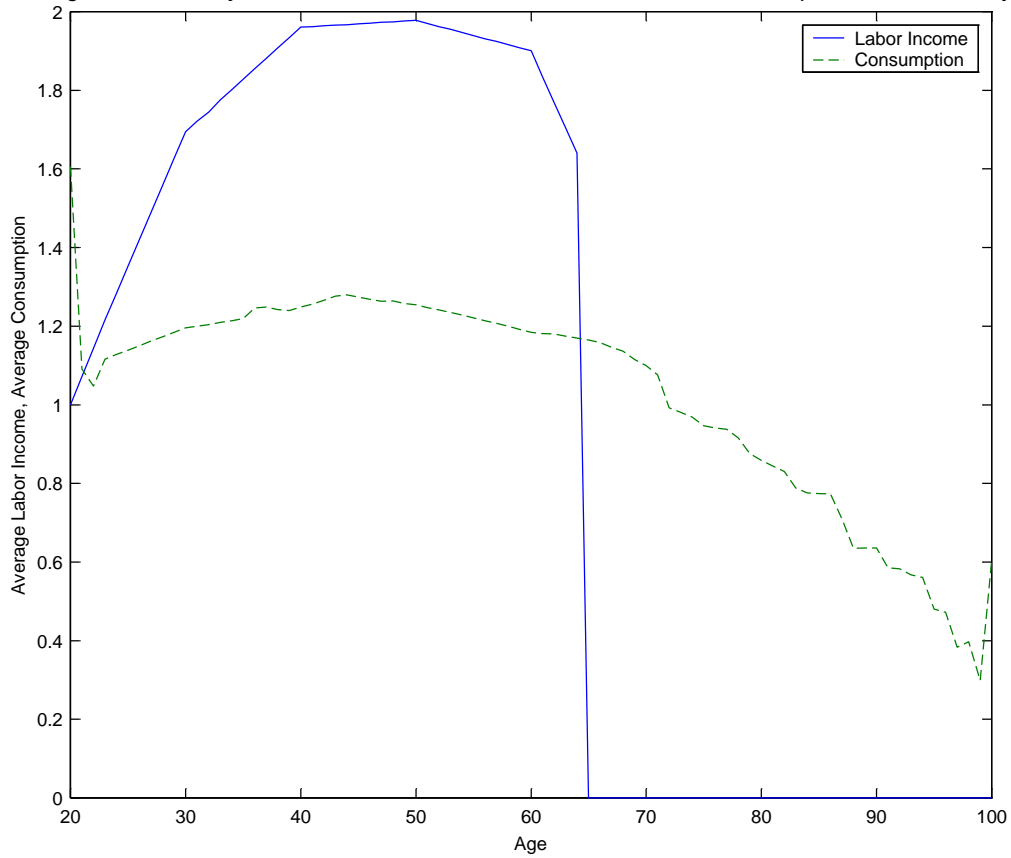


Figure 5.7: Life Cycle Pattern of Consumer Durables, Financial Wealth and Total Wealth, no uncertainty

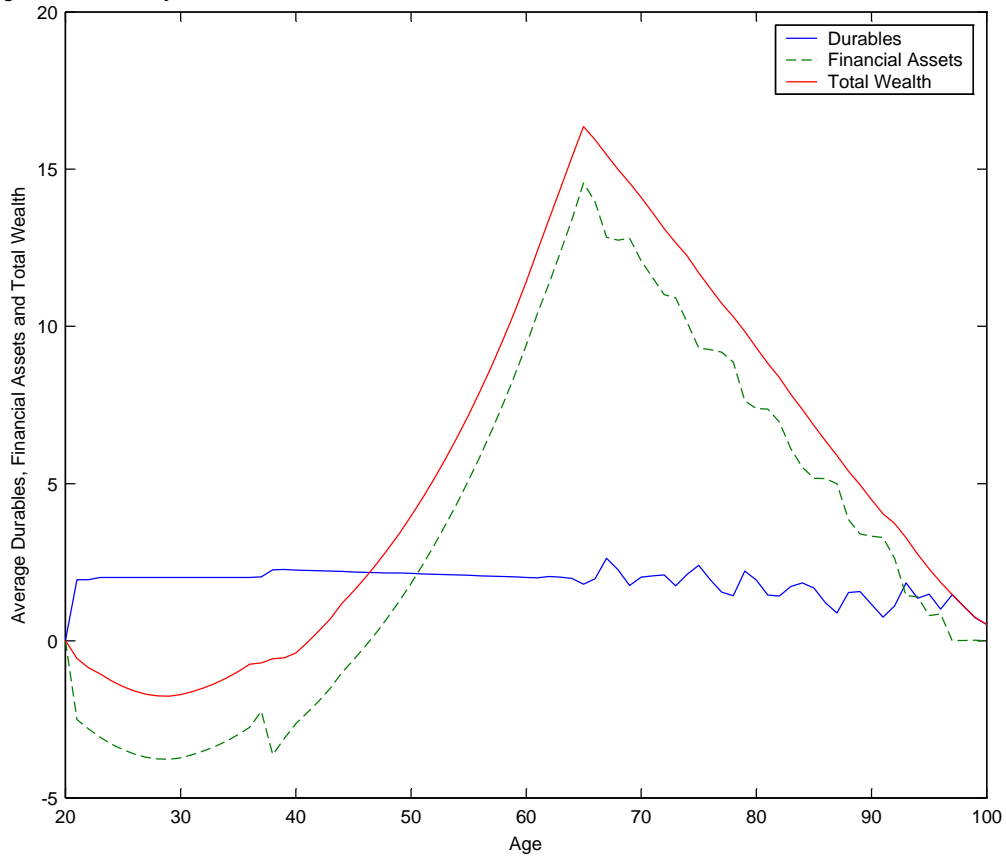


Figure 5.8: Simulated and Average Life Cycle Pattern of Financial Assets

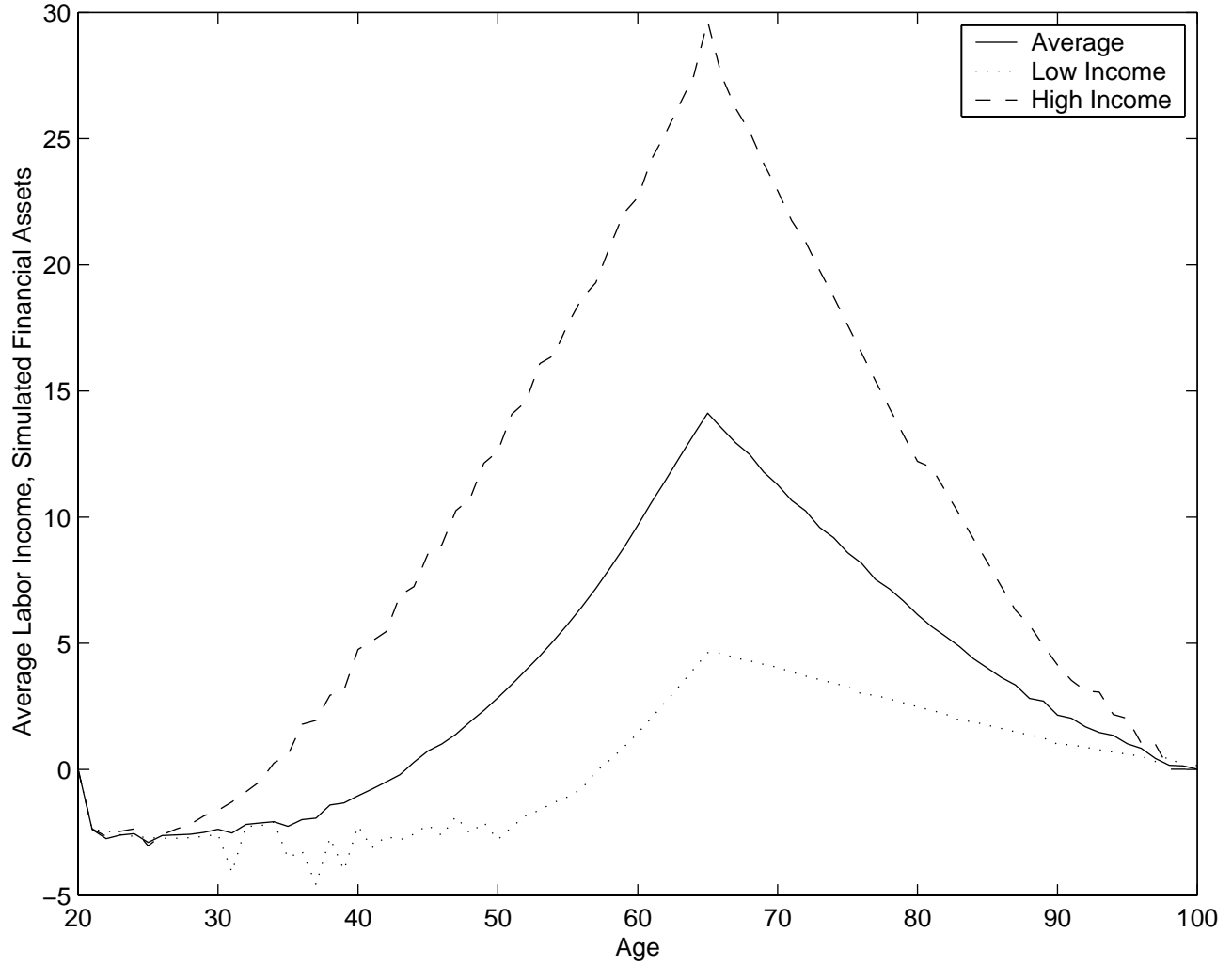


Figure 6.1: Life Cycle Pattern of Labor Income and Nondurable Consumption

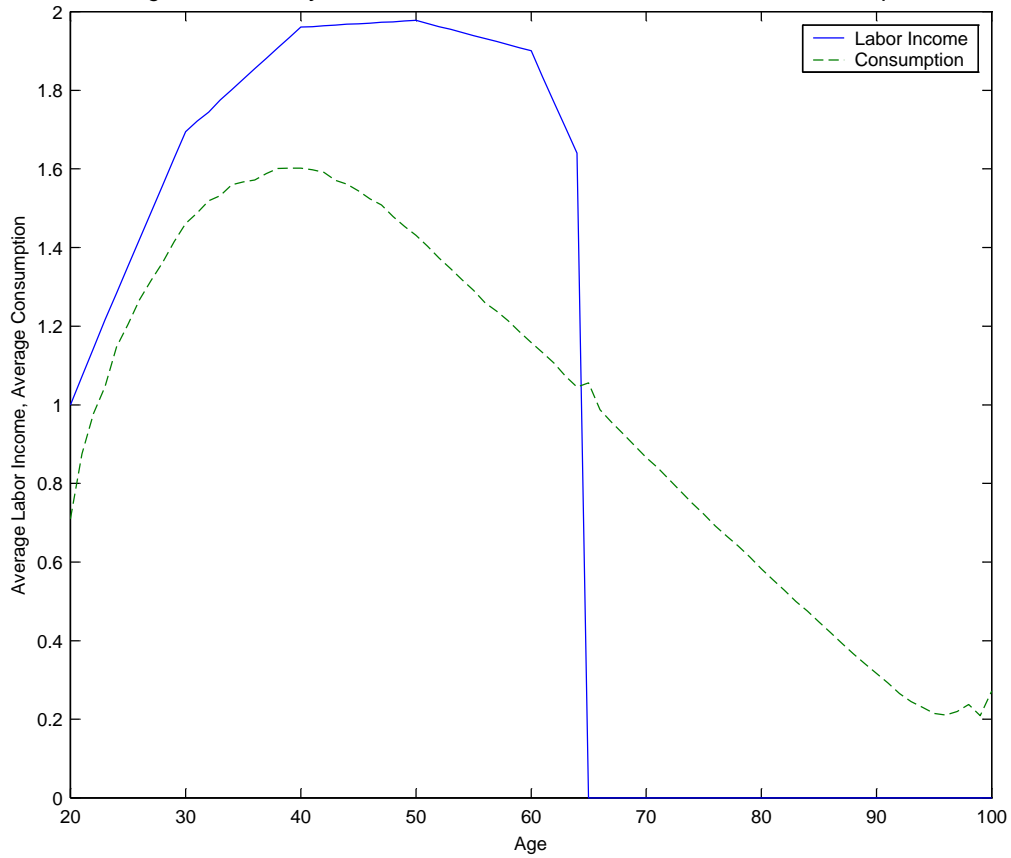


Figure 6.2: Life Cycle Pattern of Consumer Durables, Financial Wealth and Total Wealth

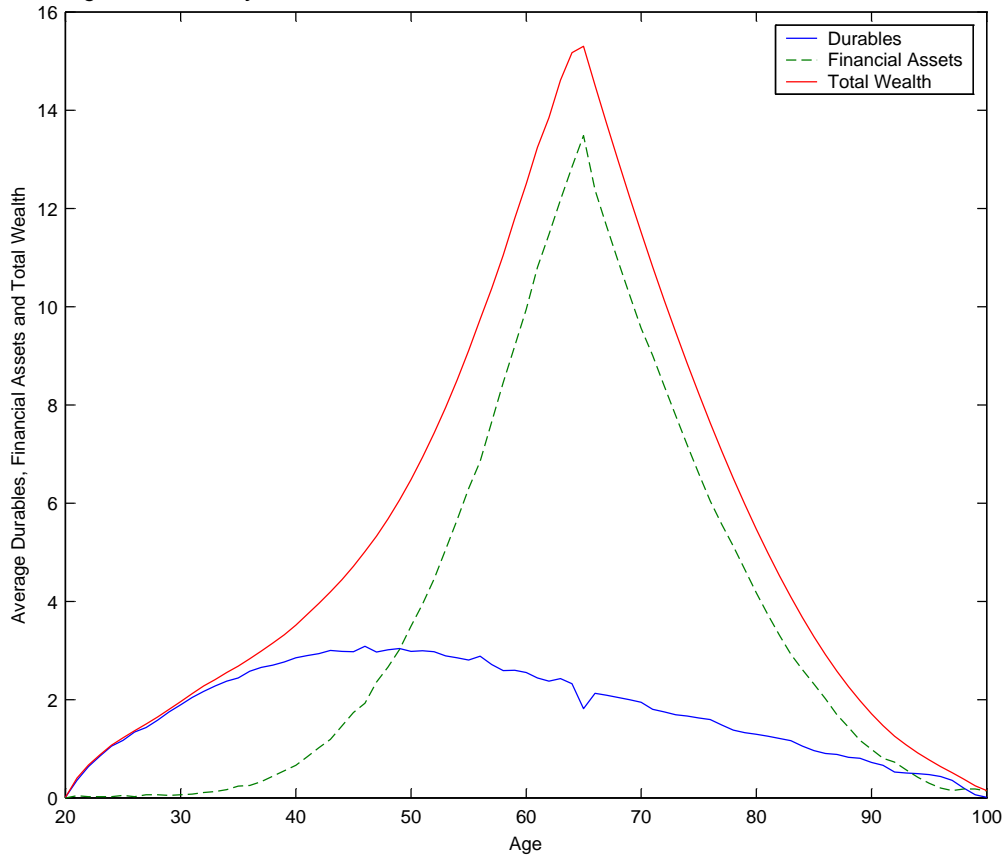


Figure 6.3: Life Cycle Pattern of Labor Income and Nondurable Consumption

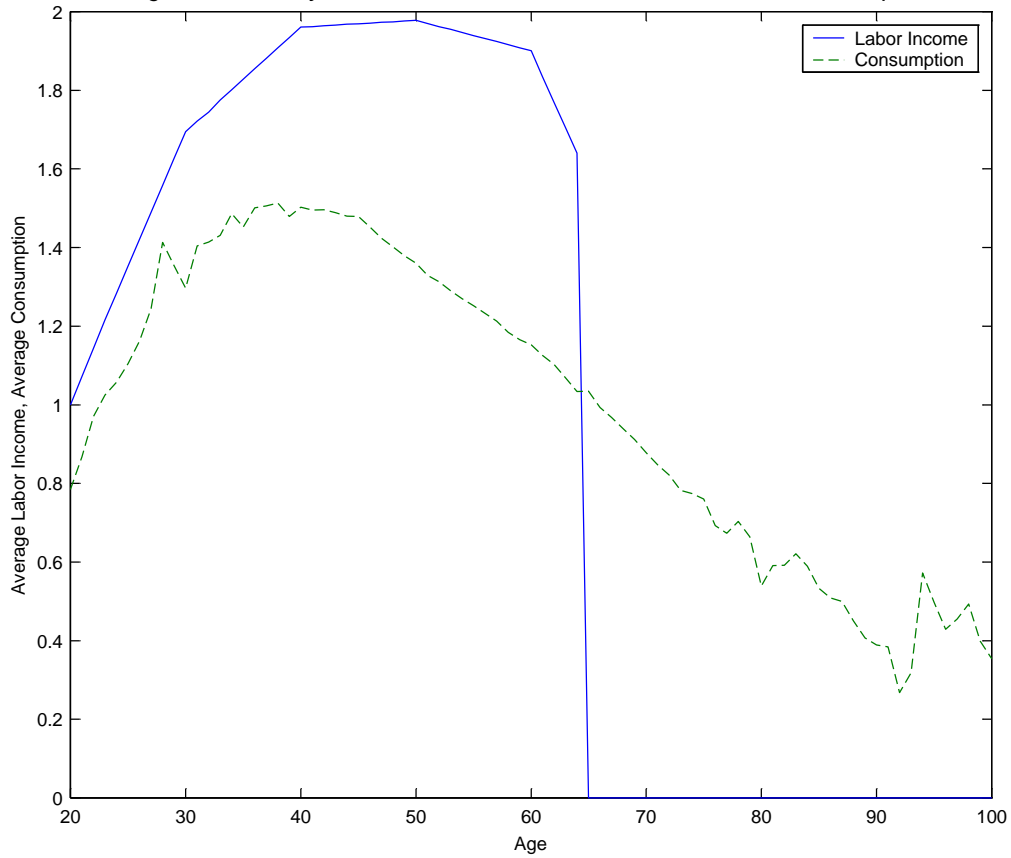


Figure 6.4: Life Cycle Pattern of Consumer Durables, Financial Wealth and Total Wealth

