The Career Decisions of Young Men

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- Keane, M. P., & Wolpin, K. I. (1997). The career decisions of young men. *Journal of Political Economy*, *105*(3), 473–522.

This paper provides structural estimates of a dynamic model of schooling, work, and occupational choice decisions ... The structural estimation framework that we adopt fully imposes the restrictions of the theory and permits an investigation of whether such a theoretically restricted model can succeed in quantitatively fitting the observed data patterns. We find that a suitably extended human capital investment model can in fact do an excellent job of fitting observed data ... and also produces reasonable forecasts of future work decisions and wage patterns.

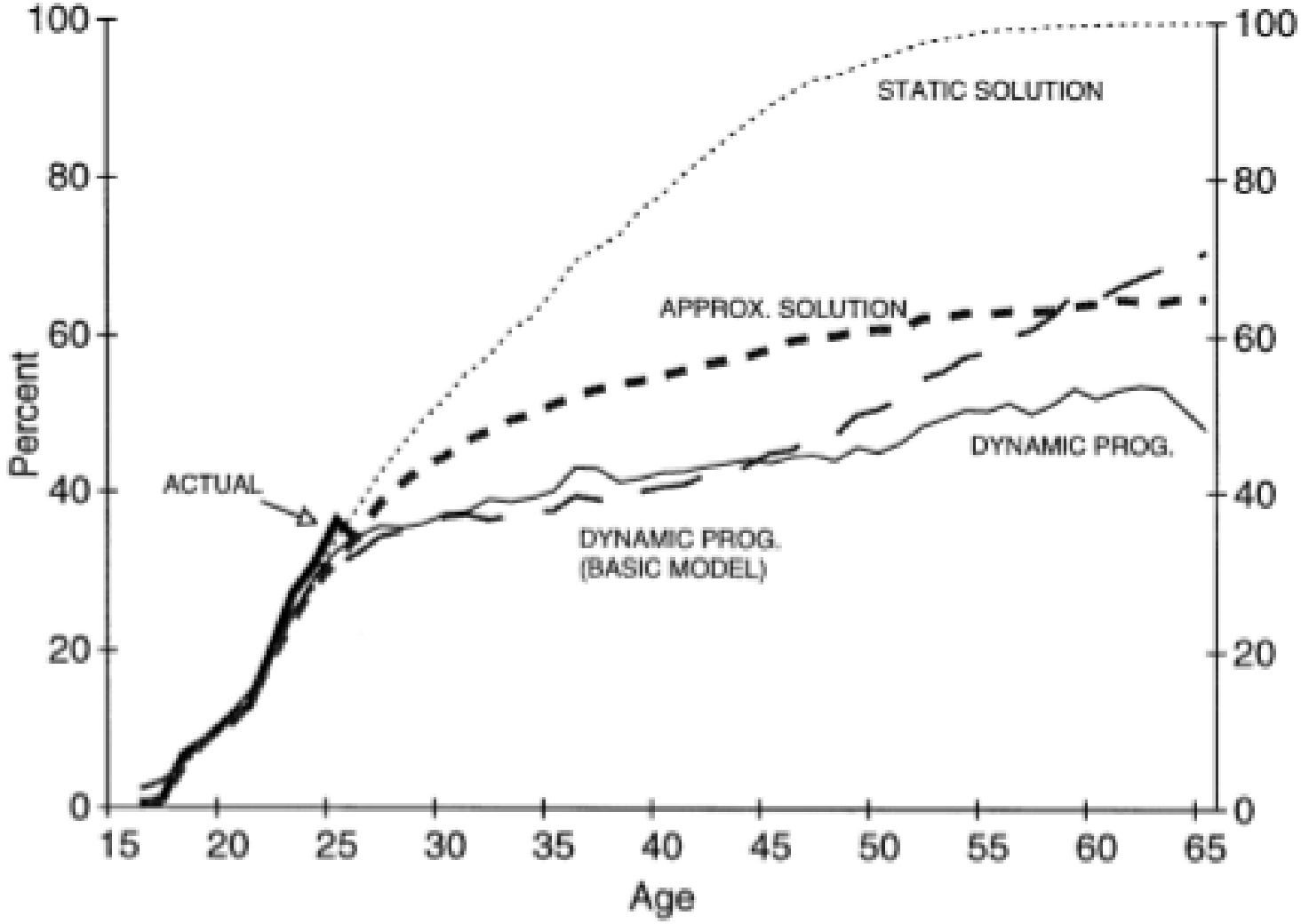

FIG. 1.—Percentage white-collar by age

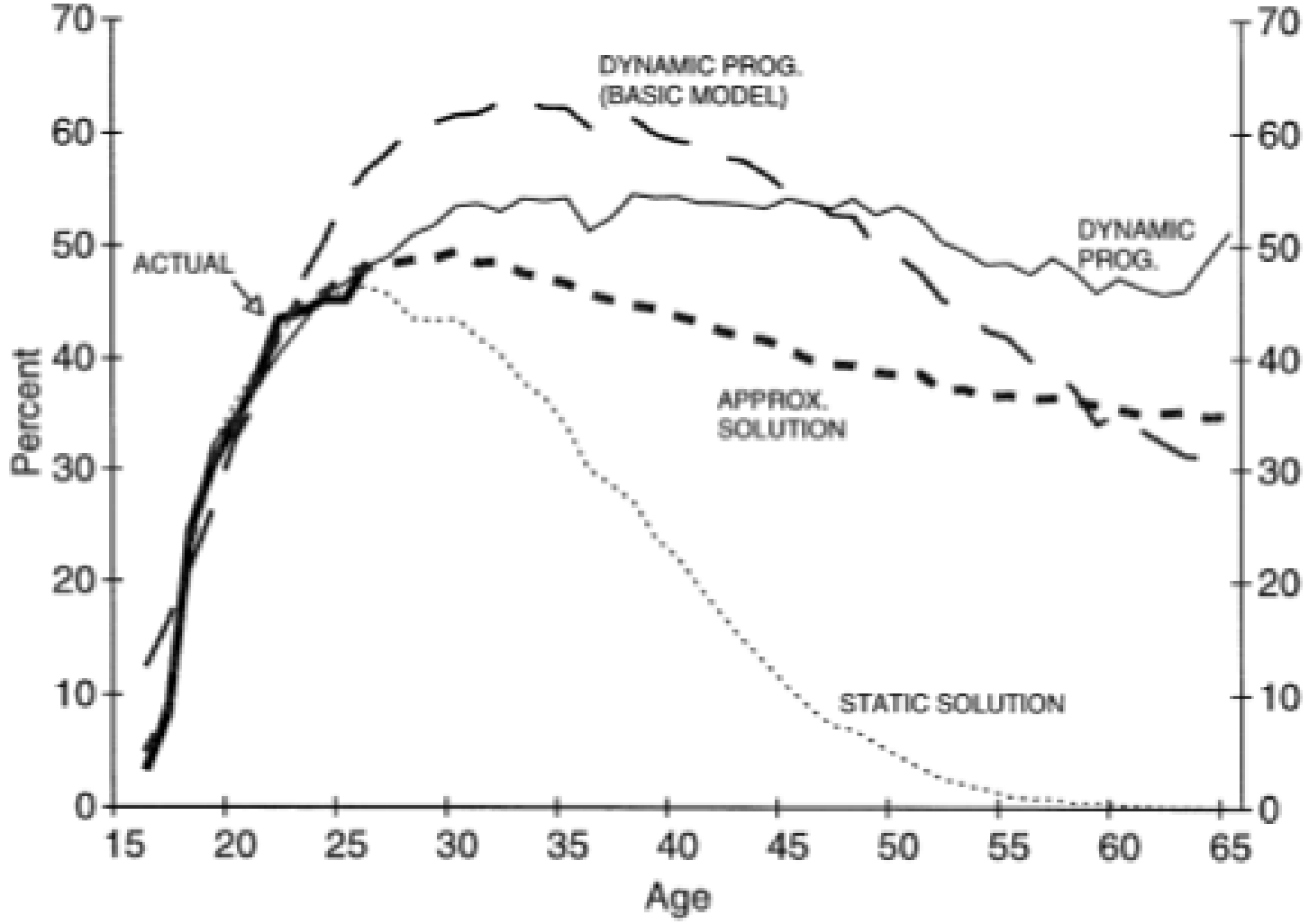

FIG. 2.—Percentage blue-collar by age

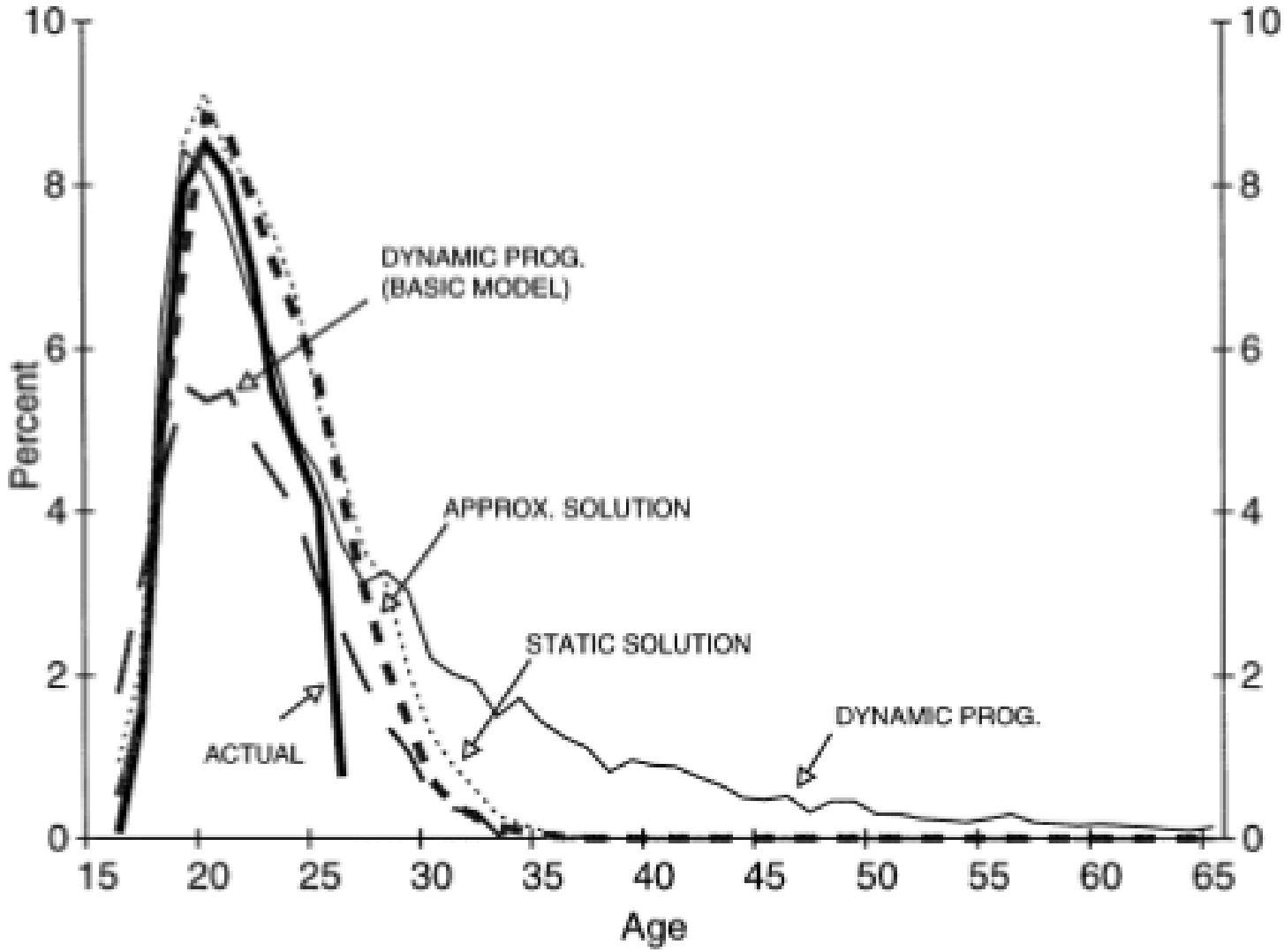

FIG. 3.—Percentage in the military by age

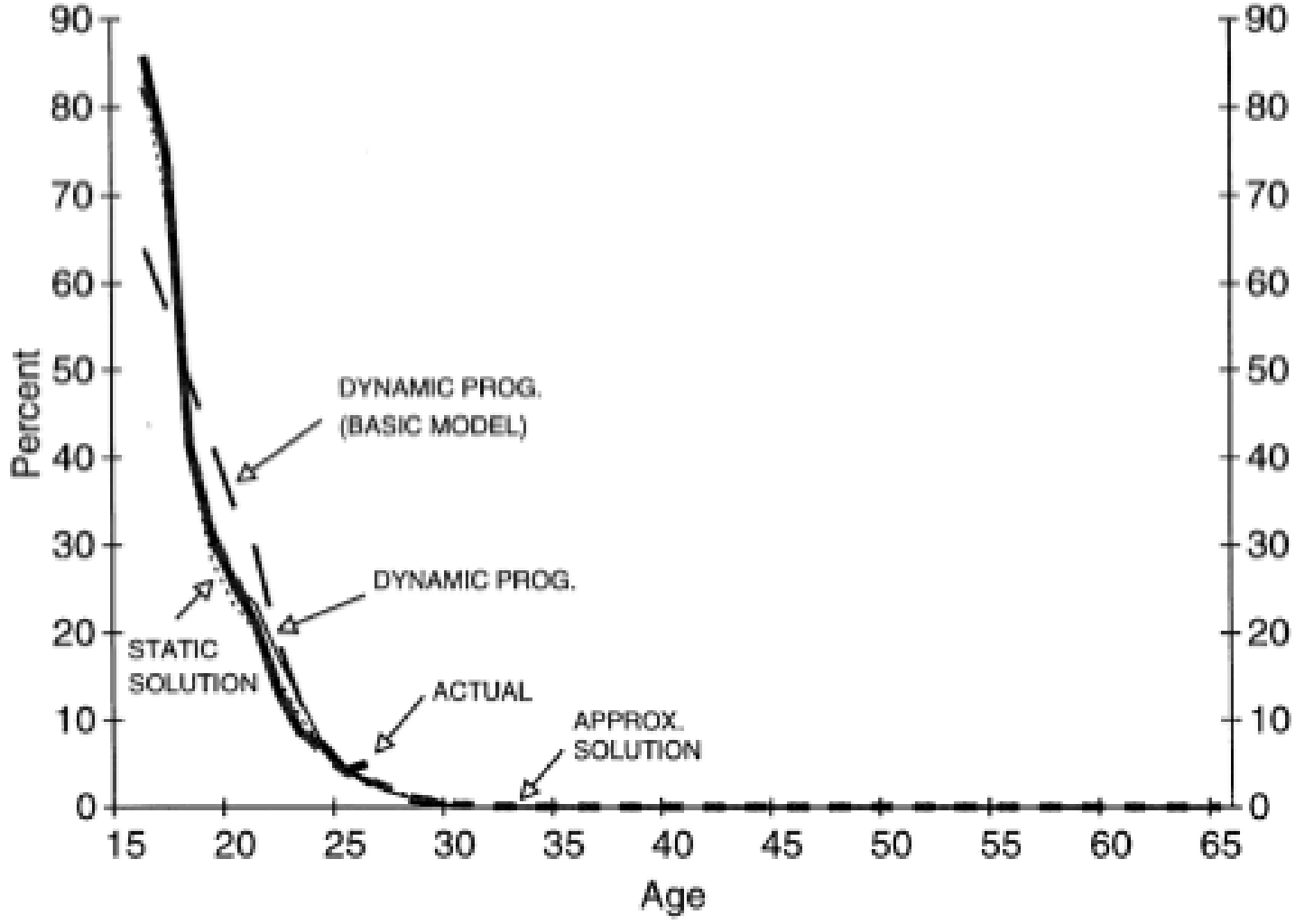

FIG. 4.—Percentage in school by age

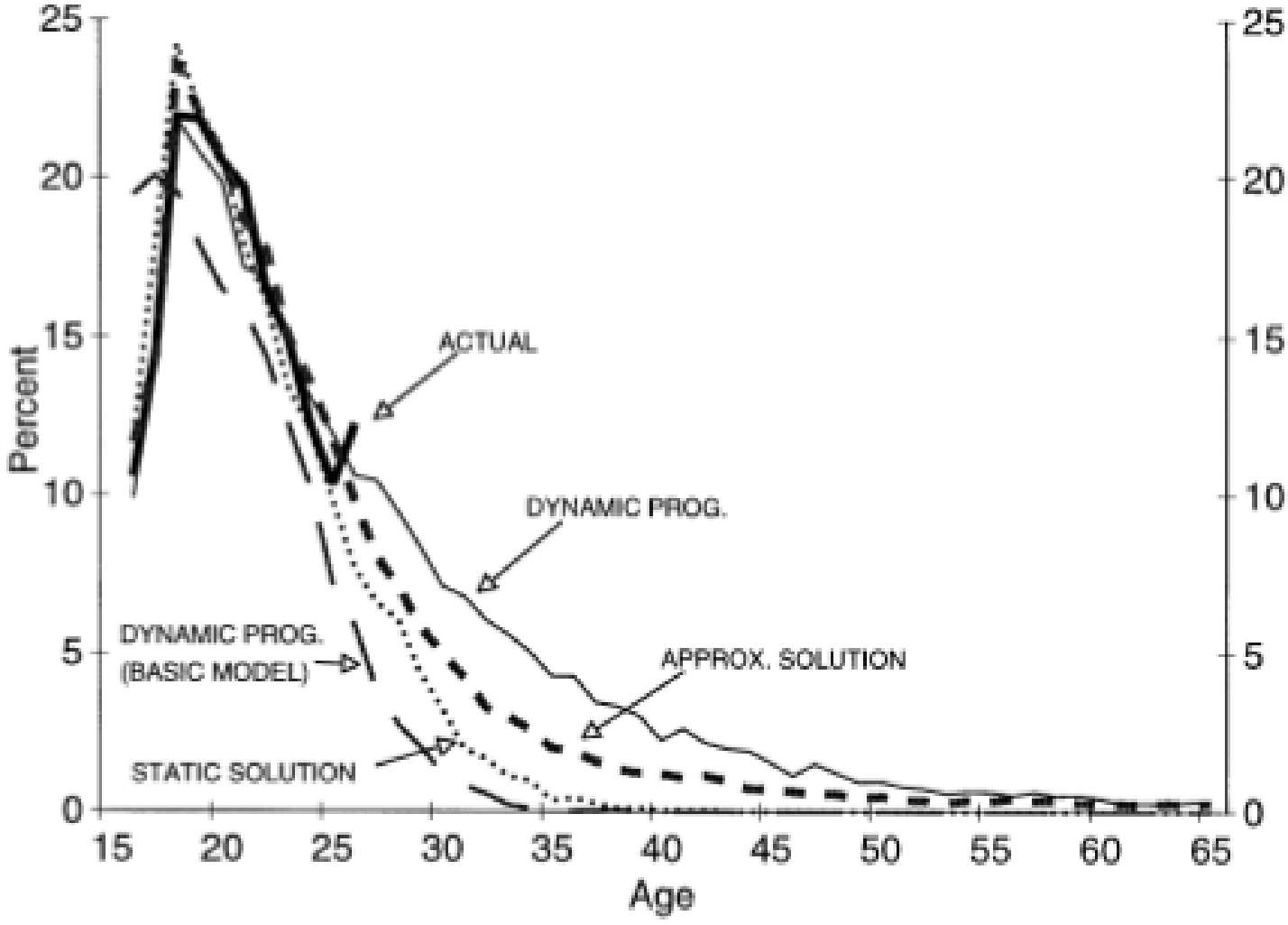

FIG. 5.—Percentage at home by age

TABLE 1

CHOICE DISTRIBUTION: WHITE MALES AGED 16–26

	CHOICE					
AGE	School	Home	White-Collar	Blue-Collar	Military	TOTAL
16	1,178	145	4	45	1	1,373
	85.8	10.6	.3	3.3	.1	100.0
17	1,014	197	15	113	20	1,359
	74.6	14.5	1.1	8.3	1.5	100.0
18	561	296	92	331	70	1,350
	41.6	21.9	6.8	24.5	5.2	100.0
19	420	293	115	406	107	1,341
	31.3	21.9	8.6	30.3	8.0	100.0
20	341	273	149	454	113	1,330
	25.6	20.5	11.2	34.1	8.5	100.0
21	275	257	170	498	106	1,306
	21.1	19.7	13.0	38.1	8.1	100.0
22	169	212	256	559	90	1,286
	13.1	16.5	19.9	43.5	7.0	100.0
23	105	185	336	546	68	1,240
	8.5	14.9	27.1	44.0	5.5	100.0
24	65	112	284	416	44	921
	7.1	12.2	30.8	45.2	4.8	100.0
25	24	61	215	267	24	591
	4.1	10.3	36.4	45.2	4.1	100.0
26	13	32	88	127	2	262
	5.0	12.2	33.6	48.5	.81	100.0
Total	4,165	2,063	1,724	3,762	645	12,359
	33.7	16.7	14.0	30.4	5.2	100.0

NOTE.—Number of observations and percentages.

TABLE 2

TRANSITION MATRIX: WHITE MALES AGED 16–26

	CHOICE (t)				
CHOICE ($t-1$)	School	Home	White-Collar	Blue-Collar	Military
School:					
Row %	69.9	12.4	6.5	9.9	1.3
Column %	91.2	32.6	2.5	14.2	11.2
Home:					
Row %	9.8	47.2	8.1	31.3	3.7
Column %	4.4	42.9	8.8	15.6	10.7
White-collar:					
Row %	5.7	6.3	67.4	19.9	.7
Column %	1.8	4.0	51.4	7.0	1.4
Blue-collar:					
Row %	3.4	12.4	9.9	73.4	.9
Column %	2.6	19.0	18.2	61.7	4.3
Military:					
Row %	1.4	5.5	3.1	9.6	80.5
Column %	.2	1.6	1.0	1.5	72.4

TABLE 4

AVERAGE REAL WAGES BY OCCUPATION: WHITE MALES AGED 16–26

	MEAN WAGE			
AGE	All Occupations	White-Collar	Blue-Collar	Military
16	10,217 (28)	...	10,286 (26)	...
17	11,036 (102)	10,049 (14)	11,572 (75)	9,005 (13)
18	12,060 (377)	11,775 (71)	12,603 (246)	10,171 (60)
19	12,246 (507)	12,376 (97)	12,949 (317)	9,714 (93)
20	13,635 (587)	13,824 (128)	14,363 (357)	10,852 (102)
21	14,977 (657)	15,578 (142)	15,313 (419)	12,619 (96)
22	17,561 (764)	20,236 (214)	16,947 (476)	13,771 (74)
23	18,719 (833)	20,745 (299)	17,884 (481)	14,868 (53)
24	20,942 (667)	24,066 (259)	19,245 (373)	15,910 (35)
25	22,754 (479)	24,899 (207)	21,473 (250)	17,134 (22)
26	25,390 (206)	32,756 (79)	20,738 (125)	...

NOTE.—Number of observations is in parentheses. Not reported if fewer than 10 observations.

TABLE 7

ESTIMATED OCCUPATION-SPECIFIC PARAMETERS

	White-Collar	Blue-Collar	Military
	1. Skill Functions		
Schooling	.0700 (.0018)	.0240 (.0019)	.0582 (.0039)
High school graduate	−.0036 (.0054)	.0058 (.0054)	...
College graduate	.0023 (.0052)	.0058 (.0080)	...
White-collar experience	.0270 (.0012)	.0191 (.0008)	...
Blue-collar experience	.0225 (.0008)	.0464 (.0005)	...
Military experience	.0131 (.0023)	.0174 (.0022)	.0454 (.0037)
"Own" experience squared/100	−.0429 (.0032)	−.0759 (.0025)	−.0479 (.0140)
"Own" experience positive	.1885 (.0132)	.2020 (.0128)	.0753 (.0344)
Previous period same occupation	.3054 (.1064)	.0964 (.0124)	...
Age*	.0102 (.0005)	.0114 (.0004)	.0106 (.0022)
Age less than 18	−.1500 (.0515)	−.1433 (.0308)	−.2539 (.0443)
Constants:			
Type 1	8.9370 (.0152)	8.8811 (.0093)	8.540 (.0234)
Deviation of type 2 from type 1	−.0872 (.0089)	.3050 (.0138)	...
Deviation of type 3 from type 1	−.6091 (.0143)	−.2118 (.0144)	...
Deviation of type 4 from type 1	−.5200 (.0199)	−.0547 (.0177)	...
True error standard deviation	.3864 (.0094)	.3823 (.0074)	.2426 (.0249)
Measurement error standard deviation	.2415 (.0140)	.1942 (.0134)	.2063 (.0207)
Error correlation:			
White-collar	1.0000	...	...
Blue-collar	.1226 (.0430)	1.0000	...
Military	.0182 (.0997)	.4727 (.0848)	1.0000

TABLE 8

ESTIMATED SCHOOL AND HOME PARAMETERS

	School		Home	
Constants:				
Type 1	11,031	(626)	20,242	(608)
Deviation of type 2 from type 1	−5,364	(1,182)	−2,135	(753)
Deviation of type 3 from type 1	−8,900	(957)	−14,678	(679)
Deviation of type 4 from type 1	−1,469	(1,011)	−2,912	(768)
Has high school diploma	804	(137)	...	
Has college diploma	2,005	(225)	...	
Net tuition costs: college	4,168	(838)	...	
Additional net tuition costs: graduate school	7,030	(1,446)	...	
Cost to reenter high school	23,283	(1,359)	...	
Cost to reenter college	10,700	(926)	...	
Age*	−1,502	(111)	...	
Aged 16–17	3,632	(1,103)	...	
Aged 18–20	...		−1,027	(538)
Aged 21 and over	...		−1,807	(568)
Error standard deviation	12,821	(735)	9,350	(576)
Discount factor	.9363 (.0014)			

NOTE.—Standard errors are in parentheses.

* Age is defined as age minus 16.

TABLE 9

ESTIMATED TYPE PROPORTIONS BY INITIAL SCHOOLING LEVEL AND TYPE-SPECIFIC ENDOWMENT RANKINGS

	Type 1	Type 2	Type 3	Type 4
Initial schooling:				
Nine years or less	.0491 (· · ·)	.1987 (.0294)	.4066 (.0357)	.3456 (.0359)
10 years or more	.2343 (· · ·)	.2335 (.0208)	.3734 (.0229)	.1588 (.0183)
Rank ordering:				
School attainment at age 16	1	2	3	4
White-collar skill endowment	1	2	4	3
Blue-collar skill endowment	2	1	4	3
Consumption value of school net of effort cost	1	3	4	2
Value of home production	1	2	4	3

NOTE.—Standard errors are in parentheses.

TABLE 10

MODEL PREDICTIONS VS. CPS CHOICE FREQUENCIES

Age Range	NLSY*	CPS (Year)†	DP-Basic*	DP-Extended†	Approximation*
			White-Collar		
16–19	.043	.064 (1981)	.052	.043	.041
20–23	.190	.187 (1985)	.176	.187	.180
24–26	.344	.345 (1989)	.307	.335	.332
24–27	· · ·	.348 (1989)	.323	.343	.349
28–31	· · ·	.384 (1993)	.365	.375	.443
30–33	· · ·	.413 (1995)	.370	.388	.472
35–44	· · ·	.449 (1995)	.405	.430	.547
			Blue-Collar		
16–19	.171	.265 (1981)	.199	.182	.176
20–23	.430	.432 (1985)	.416	.418	.434
24–26	.475	.472 (1989)	.544	.490	.498
24–27	· · ·	.476 (1989)	.565	.494	.498
28–31	· · ·	.465 (1993)	.616	.539	.495
30–33	· · ·	.460 (1995)	.624	.547	.487
35–44	· · ·	.423 (1995)	.595	.541	.440

TABLE 12

EXPECTED PRESENT VALUE OF LIFETIME UTILITY FOR ALTERNATIVE CHOICES AT AGE 16 AND AT AGE 26 BY TYPE ($)

	All Types	Type 1	Type 2	Type 3	Type 4
	Initial Schooling 10 Years or More				
School:					
Age 16	321,008	415,435	394,712	228,350	289,683
Age 26	384,352	499,162	494,107	272,985	314,708
Home:					
Age 16	298,684	380,660	376,945	207,768	274,901
Age 26	426,837	611,167	516,547	291,932	338,653
White-collar:					
Age 16	293,683	372,544	372,733	207,586	262,370
Age 26	439,970	637,616	528,107	303,228	338,967
Blue-collar:					
Age 16	296,736	373,156	377,618	210,699	266,206
Age 26	438,240	617,873	534,578	305,641	342,195
Military:					
Age 16	285,686	350,655	356,202	210,461	261,944
Age 26	415,374	581,996	492,531	298,431	329,938
Maximum over choices:					
Age 16	321,921	415,503	396,108	229,265	291,122
Age 26	445,488	638,820	537,226	308,259	346,695

... skill endowment heterogeneity is potentially an important determinant of inequality in lifetime welfare. Indeed, on the basis of the simulated data, the between-type variance in expected lifetime utility is calculated to account for 90 percent of the total variance. It is especially troublesome, given this finding, that unobserved heterogeneity is usually left as a black box.

TABLE 14

EFFECT OF A $2,000 COLLEGE TUITION SUBSIDY ON SELECTED CHARACTERISTICS BY TYPE

	All Types	Type 1	Type 2	Type 3	Type 4
Percentage high school graduates:					
No subsidy	74.8	100.0	68.6	70.2	67.0
Subsidy	78.3	100.0	73.2	74.0	72.2
Percentage college graduates:					
No subsidy	28.3	98.7	11.1	8.6	19.5
Subsidy	36.7	99.5	21.0	17.1	32.9
Mean schooling:					
No subsidy	13.0	17.0	12.1	12.0	12.4
Subsidy	13.5	17.0	12.7	12.5	13.0
Mean years in college:					
No subsidy	1.34	3.97	.69	.59	1.05
Subsidy	1.71	3.99	1.14	1.00	1.58

NOTE.—Subsidy of $2,000 each year of attendance. Based on a simulation of 5,000 persons.

Appendix

References

Keane, M. P., & Wolpin, K. I. (1997). The career decisions of young men. *Journal of Political Economy*, *105*(3), 473–522.