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13 Family Effects in Youth Employment

Albert Rees and Wayne Gray

13.1 Introduction

Youth unemployment can be divided into two principal components. One of these arises from the high turnover among young people. As Baily and Tobin have written: "Much teenage unemployment, it is often observed, comes from dissatisfaction with the available job options, a gap between expectations or aspirations and the realities of low wages and poor working conditions. One consequence is high turnover. Even when jobs are available, therefore, unemployment is high."[1]

The second component arises from the shortage of jobs. As Clark and Summers point out, "the substantial cyclic response to changes in aggregate demand suggest that a shortage of job opportunities characterizes the youth labor market."[2] This second component is, of course, larger during recessions. The data used in this study, described in the next section, refer to 1975 and the early part of 1976, when unemployment was still quite high. The unemployment rate for the whole civilian labor force was above 7% throughout this period and rates for young workers (16 to 19 years old) were above 18%. The component representing demand deficiency at current wage rates, rather than turnover, must therefore have been substantial.

The existence of demand deficiency unemployment of youths has an implication that we seek to test: If there is a shortage of jobs for young

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workers at prevailing wages, then there must be one or more nonprice rationing mechanisms that determine which young people get the available jobs. Our special hypothesis is that the family of the young person furnishes such a mechanism: those young people get jobs whose parents or siblings have jobs, particularly jobs in which they can influence hiring decisions. Some support for this view can be found in earlier studies of the labor force participation of young people. Bowen and Finegan, who found that after controlling for other factors the labor force participation of married women falls with husbands' incomes, were surprised to find that the adjusted labor force participation rate of males 14 to 17 in school in urban areas in 1960 *rose* through the range of other family income between $4,000 and $11,000. In seeking to explain this, they wrote: "We suspect that part of the explanation turns on the comparative advantage that youngsters in these families have in finding part-time jobs. For one thing, their parents are more frequently able to help, mainly as a result of their business and social contacts."[3] Robert Lerman found significant effects of parents' occupations on the employment of youths, using dummy variables for broad occupational categories. In particular, he found that having a parent who is a white-collar worker, either salaried or self-employed, or a farm manager, significantly increases the probability of employment relative to having one who is a low-level blue-collar worker.[4]

It should be noted that giving assistance in finding work is clearly not the only way in which family members can influence the employment prospects of young people. Much education takes place in the home so that youths who have well-educated parents and who have been exposed to books and to serious discussion while growing up may have advantages in finding and holding jobs over other youths with the same amount of formal schooling. Moreover, families have expectations about how their members should behave. Young people whose families expect them to go to work for whatever reason (cultural, religious, or economic) are more likely to be employed than young people whose families do not have this expectation. We shall refer to such expectations as a work ethic.

It follows that a variety of variables measuring different aspects of the family and its members might have some discernible effect on estimates of employment probabilities. In addition to family income, these could include education, occupation, and location. (The work ethic might be stronger in some areas than in others.)

We set out to test the hypothesis that parental contacts assist youths in finding jobs. Our results show no significant effects of parental characteristics on youth employment. We do, however, find significant effects of the employment status of siblings, which indicates the presence of some sort of intrafamily interactions.

13.2 The Data Set

The results presented in this paper are from the cross-sectional data set called the "Survey of Income and Education" collected in the spring of 1976 (April through July). The full sample is a national stratified probability sample of households in which 151,000 households were interviewed. This makes the sample roughly three times the size of the Current Population Survey. The interview includes most of the information available from CPS interviews, plus a good deal of additional detail on sources of 1975 income and on education.

We have analyzed data for men and women aged 17 to 20 living in nonfarm households where they are the children of the head. This excludes those young people who have moved out of their parents' household to live by themselves or establish their own families. The group that was 17 to 20 in 1976 was 16 to 19 in 1975, and one of our dependent variables measures work experience in 1975. Using the ages 17 to 20 in 1976 rather than 16 to 19 also gives us a less unequal division of the sample between those in school and those not in school.

The distinction made here between those in school and those not in school is based on whether or not the person had attended school since February 1976. The alternative of using major activity in the survey reference week is only viable for those observations collected in April and May, since many June and July observations were collected during school vacations.

The regressions presented in the next section are based on a data file we have created that merges observations on the young person with observations on household income and individual data on other members of the household 16 years of age and older. These individual data include sex, age, schooling status, employment status, and relationship to the young person. Additional data are used on the head of household (one of the youth's parents), including industry, occupation, and years of education. These, it was felt, could help to measure the likelihood of the parent having contacts that would help the youth get a job.

13.3 Regression Results

We have been persuaded by the work of Clark and Summers, among others, that for young people the distinction between being unemployed and being out of the labor force is not always meaningful, since the boundary between these states is so blurred. Accordingly, we use several measures of employment as our dependent variables. The two measures shown here are: (1) estimated total hours worked last year (the product of weeks worked and usual hours per week) and (2) a dichotomous variable taking the value of one if the teenager was employed in the survey

reference week. We also used weeks worked last year and a dichotomous variable indicating unemployment in the survey reference week as dependent variables, but the results are not presented here. The regressions using weeks worked give similar results to those using total hours worked but their explanatory power is not quite as great. The regressions using unemployment explain very little for in-school youths. For out-of-school youths all significant coefficients in the employment regression have the opposite sign in the unemployment regression, though the explanatory power is again low.

Each model was estimated separately for males and females in and out of school. We chose to treat the decision to attend school as given, rather than as jointly endogenous with the decision to work, in order to simplify estimation. The means for many variables differ substantially across the subsets, especially for the dependent variables. The differences are most striking between in-school and out-of-school youths, with out-of-school youths showing stronger ties to the labor force: over one-third more employment and unemployment and twice as many hours worked last year as in-school youths. The coefficients obtained in the separate estimations are also quite different for in-school and out-of-school youths, ruling out any attempt to capture the effects of school attendance with a dummy variable. The split between male and female shows less conclusive differences, although the effects of some of the control variables (notably marriage) do vary substantially between groups.

Table 13.1 gives the means and standard deviations of all variables for each of the four subsets used. Table 13.2 shows our estimates of the determinants of estimated hours worked last year. We used a tobit technique to allow for the presence of people who did not work in 1975 and hence have zero hours observed. Table 13.4 shows the corresponding estimates of the determinants of employment in the reference week, using a probit technique to allow for the dichotomous nature of the dependent variable. Tables 13.3 and 13.5 simply involve rescaling the tobit and probit coefficients to correspond to ordinary least-squares coefficients for easier interpretation.

In general, we get significant effects (at the 5% level) for variables measuring schooling, race, being in a female-headed household, and being in a poverty area. We also estimate significant effects for the employment status of siblings, but generally not for the employment status of the head.

13.3.1 Schooling

Since we are dealing with people whose schooling has often not been completed, we measure years of school completed relative to the mean for all people of the same age in the main SIE sample. The variable "education gap 1" measures the number of years above the overall mean

Table 13.1 Characteristics of the Population, Youths 17–20

Independent variables	Means and standard deviations of variables			
	In school		Not in school	
	Male	Female	Male	Female
Education gap 1	.689	.800	.240	.332
	(.738)	(.771)	(.452)	(.517)
Education gap 2	.253	.194	.752	.571
	(.807)	(.790)	(1.365)	(1.273)
Other family income $\times 10^4$	2.088	2.117	1.677	1.704
	(1.281)	(1.299)	(1.032)	(1.023)
Black	.092	.098	.106	.126
	(.290)	(.297)	(.308)	(.332)
Spanish	.032	.035	.045	.040
	(.175)	(.185)	(.207)	(.196)
Female head	.132	.142	.177	.181
	(.339)	(.349)	(.382)	(.385)
Male head self-employed	.101	.103	.090	.082
	(.302)	(.305)	(.287)	(.275)
Poverty area	.127	.123	.183	.171
	(.333)	(.329)	(.387)	(.377)
Older brother not employed	.093	.093	.065	.060
	(.291)	(.291)	(.247)	(.237)
Older brother employed	.160	.162	.140	.154
	(.366)	(.369)	(.347)	(.361)
Older sister not employed	.077	.073	.048	.046
	(.267)	(.260)	(.213)	(.209)
Older sister employed	.119	.121	.081	.113
	(.324)	(.326)	(.272)	(.317)
Younger brother not employed	.107	.098	.152	.156
	(.309)	(.297)	(.359)	(.362)
Younger brother employed	.091	.086	.143	.126
	(.288)	(.280)	(.350)	(.332)
Younger sister not employed	.117	.114	.157	.153
	(.321)	(.318)	(.364)	(.360)
Younger sister employed	.071	.079	.103	.094
	(.257)	(.270)	(.304)	(.293)
Dependent variables				
Employment last week	.539	.481	.710	.672
	(.498)	(.500)	(.454)	(.470)
Total hours worked last year	511.9	400.0	1064.2	925.8
	(542.5)	(465.3)	(856.6)	(790.8)
Unemployment last week	.101	.106	.178	.139
	(.301)	(.307)	(.383)	(.346)
Number of observations	9196	8385	3534	2604

Table 13.2 Determinants of Total Hours Worked Last Year, Youths 17–20

Independent variables	Coefficients and *t*-ratios			
	In school		Not in school	
	Male	Female	Male	Female
Education gap 1	−22.9	14.0	−165.2	−81.4
	(−2.20)	(1.46)	(−4.44)	(−2.17)
Education gap 2	−127.2	−90.5	−85.6	−122.8
	(−11.99)	(−9.22)	(−7.40)	(−9.66)
Other family income × 10^{-4}	−13.	8.	46.	61.
	(−2.00)	(1.22)	(2.64)	(2.95)
Black	−243.7	−226.7	−471.6	−583.5
	(−8.98)	(−8.70)	(−8.28)	(−9.62)
Spanish	−97.9	−96.8	−272.7	−232.8
	(−2.47)	(−2.66)	(−3.44)	(−2.66)
Female head	−47.6	1.9	−82.5	35.1
	(−2.14)	(0.10)	(−1.85)	(0.72)
Male head self-employed	36.9	−4.3	54.2	68.1
	(1.69)	(−0.19)	(1.01)	(1.05)
Poverty area	−111.3	−98.5	−38.8	−198.7
	(−4.76)	(−4.19)	(−0.83)	(−3.71)
Older brother not employed	−129.3	−64.1	−207.5	−42.9
	(−5.27)	(−2.57)	(−3.36)	(−0.60)
Older brother employed	35.0	19.7	123.1	−58.9
	(1.88)	(1.08)	(2.54)	(−1.18)
Older sister not employed	−87.9	−59.4	−148.4	−144.7
	(−3.32)	(−2.19)	(−2.10)	(−1.72)
Older sister employed	43.3	17.6	−5.4	115.1
	(2.00)	(0.82)	(−0.09)	(1.95)
Younger brother not employed	−53.8	−8.6	−197.2	−77.0
	(−2.39)	(−0.37)	(−4.5)	(−1.58)
Younger brother employed	168.6	128.0	207.8	24.9
	(7.03)	(5.45)	(4.33)	(0.46)
Younger sister not employed	−49.9	−65.0	−107.5	−33.1
	(−2.32)	(−2.99)	(−2.52)	(−0.68)
Younger sister employed	177.2	192.0	82.8	209.6
	(6.65)	(7.32)	(1.54)	(3.00)
Controls for:				
Single years of age	3	3	3	3
Health status	2	2	2	2
Marriage	1	1	1	1
Region	8	8	8	8
Number of observations	9196	8385	3534	2604
Number of uncensored observations	7036	5806	2925	2032
Log likelihood	−57101.3	−47217.9	−24670.9	−17088.3
Estimated sigma	623.6	578.7	910.0	855.8
Mean of dependent variable (for uncensored observations)	669.0	577.7	1285.7	1186.5

Table 13.3 Determinants of Total Hours Worked Last Year, Youths 17–20

Independent Variables	Standardized coefficients ("*DY/DX*")			
	In school		Not in school	
	Male	Female	Male	Female
Education gap 1	−17.1	9.5	−141.6	−67.2
Education gap 2	−94.9	−61.6	−73.4	−101.3
Other family income × 10^{-4}	−9.	5.	40.	50.
Black	−181.8	−154.3	−404.1	−481.1
Spanish	−73.0	−65.9	−233.6	−192.0
Female head	−35.5	1.3	−70.7	28.9
Male head self-employed	27.5	−2.9	46.5	56.2
Poverty area	−83.0	−67.1	−33.2	−163.8
Older brother not employed	−96.4	−43.6	−177.8	−35.4
Older brother employed	26.1	13.4	105.5	−48.6
Older sister not employed	−65.5	−40.5	−127.1	−119.3
Older sister employed	32.3	12.0	−4.6	94.9
Younger brother not employed	−40.1	−5.9	−168.9	−63.5
Younger brother employed	125.7	87.1	178.1	20.5
Younger sister not employed	−37.2	−44.3	−92.1	−27.3
Younger sister employed	132.1	130.7	70.9	172.9

for those who are above. "Education gap 2" measures the number of years below the overall mean for those below. Having less education than the average of one's age group lowers employment significantly in all eight regressions.

The three negative signs on "education gap 1" in table 13.2 seem to be an anomaly arising because those people with more education than their age group had a greater than average probability of being in school in the preceding year. In table 13.4, where the schooling status and dependent variables both refer to the same year, the signs on "education gap 1" are all positive.

13.3.2 Income

A second set of variables measures family income. The one used here, "other family income," is the income of the household in 1975 minus the earnings of the young person whose behavior is being measured. This has no significant effect on employment in the reference week. For those in school its effect on total hours worked in the preceding year is mixed, while it is significantly positive for those who are not in school. In earlier work we used a number of additional variables indicating whether the household received income in 1975 from various kinds of transfer payments. At some stages of our work, a few of these variables showed significant negative effects on some measures of youth employment. However, they did not remain significant in the presence of the other variables included in the final model.

Table 13.4 Determinants of Employment Last Week, Youths 17–20

Independent variables	Coefficients and *t*-ratios			
	In school		Not in school	
	Male	Female	Male	Female
Education gap 1	.057	.019	.046	.335
	(2.52)	(0.80)	(1.72)	(12.67)
Education gap 2	−.128	−0.88	−.110	−.160
	(−7.50)	(−5.94)	(−5.85)	(−7.21)
Other family income × 10^{-4}	−.047	−.013	.023	−.002
	(−0.02)	(−0.01)	(0.01)	(−0.001)
Black	−.606	−.492	−.487	−.686
	(−63.68)	(−37.19)	(−33.39)	(−32.37)
Spanish	−.318	−.231	−.022	−.210
	(−16.28)	(−10.30)	(−0.60)	(−4.83)
Female head	−.189	−.043	−.166	−.185
	(−7.67)	(−1.74)	(−3.83)	(−3.75)
Male head self-employed	.004	.015	.156	.250
	(0.08)	(0.32)	(1.83)	(2.30)
Poverty area	−.244	−.250	−.067	−.353
	(−16.22)	(−16.24)	(−2.35)	(−9.74)
Older brother not employed	−.384	−.187	−.215	−.179
	(−85.98)	(−42.79)	(−23.51)	(−21.00)
Older brother employed	.100	.047	.074	.084
	(16.70)	(11.31)	(5.95)	(3.37)
Older sister not employed	−.214	−.285	−.199	−.161
	(−41.95)	(−123.14)	(−8.69)	(−14.60)
Older sister employed	.107	.133	.131	.131
	(22.65)	(29.82)	(6.89)	(7.84)
Younger brother not employed	−.220	−.145	−.220	−.057
	(−9.91)	(−7.06)	(−7.84)	(−1.83)
Younger brother employed	.334	.385	.217	.152
	(16.22)	(19.28)	(7.71)	(4.37)
Younger sister not employed	−.148	−.204	−.031	.004
	(−8.38)	(−10.36)	(−1.16)	(0.12)
Younger sister employed	.238	.340	.152	.438
	(11.47)	(16.61)	(6.56)	(16.04)
Controls: Same as in table 13.2				
Number of observations	9196	8385	3534	2604
Log likelihood	874.7	624.8	372.7	606.5
Mean of dependent variable	.539	.481	.710	.672

13.3.3 Geographical Variables

A third set of variables deals with various geographic aspects of the labor market. The data set places observations in one of nine regions of the country. We have included a set of eight regional dummy variables in all regressions as control variables, and there are always some significant differences in youth employment by region. Variables indicating whether or not the household lived in an SMSA or in the central city of an SMSA

Table 13.5 Determinants of Employment Last Week, Youths 17–20

Independent variables	Standardized coefficients ("*DY/DX*")			
	In school		Not in school	
	Male	Female	Male	Female
Education gap 1	0.023	0.008	0.016	0.121
Education gap 2	−0.051	−0.035	−0.038	−0.058
Other family income × 10^{-4}	−0.019	−0.005	0.008	−0.001
Black	−0.241	−0.196	−0.167	−0.248
Spanish	−0.126	−0.092	−0.008	−0.076
Female head	−0.075	−0.017	−0.057	−0.067
Male head self-employed	0.002	0.006	0.053	0.091
Poverty area	−0.096	−0.100	−0.023	−0.128
Older brother not employed	−0.152	−0.074	−0.074	−0.065
Older brother employed	0.040	0.019	0.025	0.030
Older sister not employed	−0.085	−0.114	−0.068	−0.058
Older sister employed	0.042	0.053	0.045	0.047
Younger brother not employed	−0.087	−0.058	−0.075	−0.021
Younger brother employed	0.133	0.154	0.074	0.055
Younger sister not employed	−0.059	−0.081	−0.011	0.001
Younger sister employed	0.094	0.136	0.052	0.159

were not significant. The final model includes a dummy variable taking the value of one if the household lives in an area designated by the Census Bureau as a poverty area. In our sample, 12 to 13% of youths in school and 17 to 18% of youths not in school lived in such areas. This variable has an effect that is consistently negative and usually clearly significant. For youths in school of both sexes, living in a poverty area reduces the probability of employment by 10%, other things equal. Since other family income and race appear in the regressions, this should probably be interpreted as measuring the availability of job opportunities in the locality.[5]

We also tried using a variable measuring the total unemployment rate in the SMSA for SMSAs that could be identified in the data set. The unemployment rate was taken from a published external source (Department of Labor estimates for May 1976) and merged into the data set. Only about one-third of our observations were in areas for which we could use this information. The variable did not have a significant effect even in regressions confined to observations for which the variable could be used. We might have gotten better results by generating unemployment rates by area for spring 1976 from our own data set. However, this would have required processing data on all households; we have used only households including youths.

13.3.4 Race

We have used two variables to identify youth by race, dummy variables identifying blacks and Hispanics. Both are consistently negative and

usually significant with the effect of being black being generally substantially larger than that of being Hispanic. For regressions whose dependent variable is "employed last week," being black lowers the probability of employment by 17 to 25% even after controlling for schooling, other family income, and location in a poverty area. For youths not in school, in table 13.2, negative coefficients on the variable identifying blacks are about one-half the size of the mean of the dependent variable. With other measured variables equal, we estimate that black youths not in school worked half as many hours in 1975 as white youths. We also duplicated our analysis with regressions run using only observations on blacks. The results (not reported here) tend to be similar, with less consistency of coefficients between subsamples and lower significance levels, probably because of the large reduction in sample size.

We have tried using a variable measuring whether or not the principal language spoken in the household is English; this is less successful than the variable identifying Hispanics.

13.3.5 Family Influences

When we started our research, we expected to find powerful influences of the position of the head of the household on the employment status of youths living at home. The effects we find are much weaker than we expected. Living in a household with a female head has a negative effect in seven of eight regressions, and a significant one in four. Living in a household with a self-employed male head generally has a positive effect, but this is significant only once at the 5% level and twice at the 10% level for employment and hours worked last year. The effect of unemployment is consistently negative and generally significant.

Sets of dummy variables identifying male heads who were not employed and the major industry or occupation of the employed male heads performed very poorly. So did an index of three-digit occupations scaled by median income in the occupation in 1969. Education of the male head was tried and entered with a negative sign; that is, it acted as an index of permanent income rather than a measure of access to jobs.

Our second set of variables measuring family effects identifies the employment status of siblings between the ages of 16 and 24 who are in the household, using a set of eight dummy variables. Within this large set, there are four subsets, for older brother, older sister, younger brother, and younger sister.[6] In each of these subsets, there are two dummy variables, e.g., "older brother not employed" and "older brother employed"; the base or omitted variable of the subset is "no older brother living at home." If the person to whom the independent variable refers has more than one sibling between the ages of 16 and 24 living at home, there may be entries of one rather than zero in more than one of these dummy categories. For a person with two older brothers, for example,

one employed and one not employed, both dummies in the older brother subset take the value one.

Employment decisions within the household are presumably made simultaneously, and our single equation model does not permit us to analyze the simultaneity. If we have an observation on a youth named John who is employed and he has an older brother named Fred who is also employed, we detect the associations, but we cannot tell whether John found Fred a job, Fred found John a job, or whether both were subject to some common parental or environmental influence that increased the probability of their being employed. It should also be noted that if both of them are between 17 and 20, observations for both will appear somewhere in our regressions with many (though not all) of the independent variables being identical. However, the scheme should permit us to separate the effects of job contacts and the family's work ethic from income effects by examining the signs of the coefficients. The income effect of Fred's working on the probability that John will work is presumably negative.

As shown in tables 13.2 and 13.4, the positive association of employment status among siblings is very strong. For males in school, having an employed sibling significantly increases the dependent variable in seven of eight cases in the two tables. Having a sibling not employed significantly decreases the dependent variable in all eight cases. For females and males not in school the effects are not always significant, though the signs are almost always the same. Some of the effects for females are also quite large. For example, other measured variables held constant, having a younger brother employed increases the chances of a female in school being employed by 15% or increases her estimated hours worked last year by 87 relative to a mean of 400.

The differences in coefficients for siblings of different sexes may support the interpretation that the sibling variables, rather than local job availability or parental influence, reflect information networks in the labor market. Because many occupations or industries still employ workers predominantly of one sex, a youth may be better able to help a sibling of the same sex find work. The differences in coefficients may also arise from stronger demonstration effects or closer personal relationships between siblings of the same sex.

The pattern of differences in coefficients is clearest for youths not in school in table 13.2. For a female, having a younger sister employed increases estimated hours in the preceding year by 173 hours, but the effect of a younger brother employed is only 21. For a male, having a younger brother employed increases estimated hours in the preceding year by 178, but the effect of a younger sister employed is only 80. In both cases the larger figure is clearly significant at the 5% level and the smaller is not.

One further refinement of the sibling dummies was used: splitting each dummy into two dummies for the sibling being in or out of school. Besides giving an unwieldy number of coefficients to interpret, the expanded set of dummies showed few differences in coefficients based on school status. Thus we chose to use only those sibling dummies presented here in the final model.

As mentioned above, these results can only be viewed as suggestive because the family's work ethic is not distinguishable from its job contacts. One possible area for future research would involve comparing the detailed occupation and industry of each youth with those of his parents or siblings. A high correlation could indicate the presence of helpful contacts made by relatives on the job. Another approach could be to examine some other data sets to check for consistency of the basic results and to add further explanatory variables, such as the presence of reading materials during childhood, that could capture more of the unobserved part of family background. In this regard one could consult data sets that ask how the respondent found his job (or why he in particular was hired after applying).

One final alternate approach requires a different estimation technique, one presented by Gary Chamberlain.[7] This would use analysis of covariance, with each set of siblings representing a different group for comparing the within-group to the between-group variation. Some complications result from the differing numbers of observations across groups and the need to use nonlinear estimation, but it would allow one to control for unobserved family characteristics.

Any of these approaches would shed more light on what role, if any, the family plays in the employment of youths.

Notes

1. Martin Neil Baily and James Tobin, "Inflation-Unemployment Consequences of Job Creation Policies," in John L. Palmer, ed., *Creating Jobs: Public Employment Programs and Wage Subsidies* (Washington: Brookings, 1978), p. 61.

2. Kim B. Clark and Lawrence H. Summers, chapter 7 of this volume.

3. William G. Bowen and T. Aldrich Finegan, *The Economics of Labor Force Participation* (Princeton, N.J.: Princeton University Press, 1969), p. 387.

4. Robert Lerman, "Analysis of Youth Labor Force Participation, School Activity and Employment Rate," unpublished Ph.D. thesis, Massachusetts Institute of Technology, 1970.

5. An alternative explanation for this result lies in environmental characteristics common to poverty areas other than lack of jobs, such as low quality education and limited motivation.

6. This scheme of classifying siblings by sex and birth-order was suggested by the work of Claudia Goldin on the employment of youths in Philadelphia in 1880.

7. Gary Chamberlain, "Analysis of Covariance with Qualitative Data," National Bureau of Economic Research Working Paper no. 325, March 1979.

Comment

Christopher Winship

Rees and Gray have carried out an important exploratory analysis of the effects of family background on youth employment behavior. Three of their findings are of particular note. These are: (1) that the usual measures of family background have little if any effect on employment behavior of youths: (2) that receipt of government transfers (welfare, social security, etc.) has little if any effect on employment behavior; (3) that there is a large correlation between the employment behavior of siblings even after observed variables measuring family background and local labor market conditions have been controlled for. It is this last finding that I want to discuss in more detail.

The strong relationship between the employment status of siblings may have a number of sources. It may be due to the effects of unobserved family characteristics, local labor market conditions, or, as Rees and Gray suggest, the fact that siblings are able to help each other find jobs. An unnoticed finding in Rees and Gray's analysis is the distinct pattern of the effects. The effect of younger sibling's employment status is almost always greater than that of the older sibling in real, not absolute, value (an observation made by Robert Mare). This relationship holds for 29 of the 32 possible comparisons that can be made for the regressions using present employment status and hours worked during the year. Thus the fact that a younger sibling is employed has a greater effect on a respondent's employment than the fact that an older sibling is employed. Conversely, the fact that an older sibling is not employed has a greater effect, in absolute value, on one's employment (note that the effects are negative rather than positive in this case) than the fact that a younger sibling is not employed. To put it another way, knowing that a younger sibling is employed tells us more about the respondent's probable employment status than knowing that an older sibling is employed. Conversely, knowing that an older sibling is not employed tells us more about the respondent's employment status than knowing that a younger sibling is not employed. This pattern holds net of the effects of age, educational attainment, and other variables that we would expect to produce this difference.

This pattern cannot be explained by the mechanism that Rees and Gray have suggested, namely, that siblings help each other find jobs. If we assume that this was the major explanation for the correlation between sibling employment status, then we would expect to find either no pattern in the effects or that the pattern was just the opposite: an older sibling being employed should have a greater effect on an individual's

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employment status than a younger sibling. This latter conclusion follows from the assumption that older siblings are more likely to be able to provide jobs for younger ones since, presumably, they would have higher status jobs and thus have access to better jobs. Younger siblings would be likely only to have access to jobs that their older siblings would find undesirable.

This finding (that older siblings, net of age, education, and other variables, are more likely to be employed), suggests a number of alternative explanations. I shall discuss three briefly. First, it may be the case that job rationing goes on within families on an oldest-first basis. This would be particularly likely if parental personal contacts were an important source of jobs for youths. Second, there may be a normative structure within households that imposes an obligation on older youths to obtain employment before their younger siblings do. Third, and not inconsistent with either of the first two explanations, there may be a definite structure to intrafamilial labor supply in terms of the age of different siblings.

Having discussed Rees and Gray's analysis briefly, I want to turn to a discussion of the major hypothesis that they propose in their chapter. Rees and Gray propose that jobs in the youth labor market are rationed by means of parental personal contacts. They contend that they find no support in their analysis for this hypothesis. This contention is based on their finding that the traditional measures of family background and parental status have no effect on a youth's employment status.

The question I want to ask is whether this finding provides an adequate test of the proposed hypothesis. Let us break down the reasoning implicit in Rees and Gray's argument into its three constituent parts: (1) that jobs are rationed in the labor market by means of personal contacts; (2) that it is parental contacts that are critical for youths in finding jobs; (3) that parents with higher socioeconomic status should have more effective contacts in terms of their ability to find their children jobs. In order for their hypothesis to be true, statements 1 and 2 would have to be correct. Rees and Gray's test, however, relies on all three statements being true. Clearly, there is no reason that subhypotheses 1 and 2 might hold whereas subhypothesis 3 might not. In fact, one could argue that parents with lower socioeconomic status might be in a better situation to provide their children with jobs since the type of jobs they have and the places where they are employed would be closer to the type that their children would have the necessary qualifications to work in.

Table C13.1 provides more direct evidence for subhypotheses 1 and 2. The data are taken from the January 1973 Current Population Survey and its supplement.

The table indicates that personal contacts are an important mechanism for finding jobs for individuals of all age groups. Personal contacts are

Table C13.1 Method of Finding a Job by Age

Method		Age 16–19	20–24	over 24
Direct application	%	33.5	34.1	35.9
	f	399	501	821
Relatives	%	13.3	9.4	5.4
	f	155	138	134
Other personal contacts	%	28.0	18.5	18.4
	f	331	273	425
Formal and other	%	25.2	38.0	40.3
	f	299	566	924

NOTE: Weighted percentages for individuals who searched for a job and found one in 1972. Data taken from the January 1973 CPS. Frequencies are the unweighted counts.

particularly important for teenagers, for whom a full 41.3% of the jobs found are found through personal contacts. This evidence supports the hypothesis that personal contacts are an important rationing mechanism, especially for youths.

Second, the table indicates that jobs are found more often through contacts involving persons other than relatives. This is consistent with Granovetter's (1974) finding that it is usually distant and weak contacts that are most effective in helping individuals find jobs. The table does, however, indicate that contacts with relatives are more important for youths than for adults. For youths, approximately one-third of the jobs found through personal contacts are found through relatives, whereas for adults the number is less than a quarter. Thus we find only weak support for subhypothesis 2.

I have no direct evidence on the relationship between family background and the use of personal contacts. Becker (1979), however, has done some preliminary analysis on differences by race. If we recompute his figures so they are comparable to those in table C13.1, his findings indicate that, using the same January 1973 Current Population Survey data, white youths (aged 16–24) are more likely to have found a job through personal contacts than black youths (33.6 versus 30.7%), but that of those using personal contacts blacks are more likely than whites to use relatives (47.5 versus 32.6%). Under the assumption that blacks in the survey come from families with lower socioeconomic status than whites, this finding is consistent with the argument made above that there is no necessary reason to suspect that there is a positive relationship between the effectiveness of parental contacts and socioeconomic background.

In summary, we can say that we have found evidence to support subhypothesis 1, weaker evidence to support subhypothesis 2, and no evidence to support subhypothesis 3. Clearly, however, our discussion of

the importance of personal contacts has at best been suggestive. More work needs to be done to assess the importance of personal contacts as a mechanism by which people find jobs.

The analysis by Rees and Gray is also suggestive. Perhaps their contribution lies not so much in what they have told us about the importance or lack of importance of personal contacts, but rather in the suggestion that there are potentially rich analyses to be done on the nature of intrafamilial labor supply and employment behavior. This has been an active area with respect to husband and wives. Rees and Gray's analysis, however, suggests that there is much to be done with regard to the interdependencies among siblings. In this, their chapter has suggested important new directions for research.

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Comment

George Farkas and Ernst W. Stromsdorfer

Economists analyzing youth employment or labor supply with microdata have usually been content to estimate income and substitution effects, with little regard for intrafamily (supply-side) tastes and decision-making mechanisms or labor market (demand-side) distortions which might bias their results. Rees and Gray's chapter is thus particularly valuable in that it explicitly introduces "family work ethic" and "family job contacts" as variables which might play these roles. The authors make no attempt to separate these supply and demand side effects, and their test of the empirical importance of the resulting combined effect is only indirect, but they do produce findings which suggest that something beyond the usual income effect is occurring in their data.

As the authors note, the unexpected finding of a positive association between family income and youth labor force participation goes back at least to Bowen and Finegan (1969), who attributed it to a positive association between family income and job contacts. More recently, Gustman and Steinmeier (1979) have replicated this result; Boskin

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(1973), Hall (1973), and Ehrenberg and Marcus (1979) find little systematic effect of family income on youth employment; and both Masters and Garfinkel (1977) and McDonald and Stephenson (1979) find the expected negative effect of income. These studies differ according to data sources, age of the youth population, range of family incomes for the youth population, empirical specification (including approaches to coping with the endogeneity of schooling), and statistical methodology, among other issues, but the wide range of results suggests great uncertainty in our knowledge of family effects on youth employment.

Attempts to incorporate intrafamily taste variables into the usual offered-wage/asking-wage model of labor supply (Heckman 1974) present fewer problems of empirical implementation than do attempts to incorporate either fixed costs of working or demand-side distortions (such as minimum wages) which lead to the rationing of jobs. In the former case (intrafamily tastes), measures of taste differences can be taken as explicit determinants of the youth's reservation wage. In the latter case, the simple reservation wage theory is invalidated, since either fixed costs of working or demand deficiency at the prevailing wage cause youths to behave as though confronted with a nonconvex budget set. That is, the tobit model in which the probability of employment and the hours worked by those employed are determined by a single index (the difference between the wage offer and the asking wage), is replaced by a model in which this is no longer the case. As a result (and assuming that net wage offers are independent of the number of hours worked), estimation with tobit can be replaced by a strategy in which a truncated normal distribution is fit for the hours of those employed and a separate probit is fit for the probability of being employed. (For further discussion of these and related issues see Hausman 1979; Olsen 1977; Farkas, Stromsdorfer, and Olsen 1979.)

In this situation, the truncated normal for hours worked can still be taken to reveal the youth's "value of time at zero hours," and this can be used, in conjunction with the probit equation estimates, to identify a "disemployment index" measuring the extent to which employment probabilities inferred from the wage offer and "values of time at zero hours" of the truncated normal hours equation differ from those actually observed. This disemployment index subsumes both fixed costs of working and demand deficiencies, and its significance indicates whether the simpler tobit specification should be rejected. More formally, we write

$$\text{Hours} = B_0 (W^0 - W^*) + u; H > 0 \tag{1}$$

$$\text{Prob (Employment)} = \text{Prob}(W^0 > W^* + DI) \tag{2}$$

where W^0 = the wage offer, W^* = the value of time at zero hours, and DI = the disemployment index, each of which is taken to be a function of

exogeneous variables. If measures of family work ethic were introduced among the determinants of W^*, and measures of family job contacts were introduced among the determinants of DI, the effects of interest to Rees and Gray could be explicitly estimated.

The authors estimate instead two sets of reduced-form regressions, a tobit for hours worked and a probit for the probability of employment. They include no measure of the youth's own wage rate, but they do include other family income, and (their principle innovation) measures of whether the youth's siblings were employed. Their results for the effect of family income are as equivocal as those of others—the only significant effect is a positive one for the total hours worked by out-of-school youths. However, Rees and Gray's results for the effects of siblings' employment are new and quite suggestive—it appears that, other things being equal, the employment of siblings is strongly and positively associated. As the authors note, this may be because youths' jobs are rationed by parents' contacts rather than by price; because siblings are exposed to identical work-ethic climates; because both effects are operative; or because some other family characteristic is at work.

Further information on the determinants of youth employment is provided by estimating equations (1) and (2), above, along with a wage offer equation. This we have done with preprogram data collected for the evaluation of the Youth Incentive Entitlement Pilot Projects (see Barclay et al., 1979, for a discussion of the program, data, and evaluation design). Table C13.2 presents the results for 5,462 youths aged 14–17 from low-income households during the summer of 1977 and residing in one of the eight study sites. (We focus on summer labor supply in order to avoid complications associated with the endogeneity of schooling.)

We find that the youth's own wage exerts a powerful positive effect on total hours, but that other family income exerts no significant effect on the youth's value of time at zero hours. Wage offers (estimated with a maximum likelihood correction for possible selection bias and nonnormal residuals) are generally quite far in excess of estimated values of time at zero hours, yet only 36% of the sample is employed, suggesting that fixed costs of working or demand-side distortions are quite powerful. This situation is evidenced by the large constant term for the disemployment index (a finding which also demonstrates the inappropriateness of the simple tobit model). The relatively large positive coefficients associated with the effect of a youth's own child on his disemployment index suggests the existence of fixed costs associated with child care, but more important for Rees and Gray's concerns are the relatively insignificant effects of the other variables, including other family income. It appears that demand deficiency *is* present, but that, at least for this low-income youth population, during the summer of 1977 (when subsidized summer jobs programs for low-income youths were operating at relatively high

Table C13.2 **Coefficient Estimates for the Wage Offer, Value of Time at Zero Hours, and Disemployment Index, Model of Equations (1) and (2); *t*-statistics in Parentheses**

	Dependent variable[a]		
	LnWage	W^*	DI
Constant	.7484 (90.9)	.2497 (43.8)	.4633 (19.8)
White male	.0000 (–)		.0000 (–)
Black male	– .0677 (2.19)		– .0531 (1.53)
Hispanic male	– .0543 (1.31)		– .0311 (0.65)
White female	– .1588 (3.66)		– .0943 (1.28)
Black female	– .0772 (2.39)		– .0251 (0.43)
Hispanic female	– .0899 (2.05)		– .0392 (0.61)
Age (in months, by date of birth; 1 = December 1963)	.0021 (1.14)		
Young (age < 28)	– .0253 (0.77)	.0181 (0.77)	– .0396 (0.66)
Very young (age < 17)	– .0422 (1.20)	– .0234 (0.62)	– .0077 (0.88)
Family earned income (minus that due to the youth) ÷ 10^4		– .0089 (0.43)	.0122 (0.61)
Family welfare income (minus that due to the youth) ÷ 10^4		.0038 (0.09)	– .0244 (0.99)
Family size			.0003 (0.33)
Living with parents		.0008 (0.02)	.0105 (0.78)
Male youth with own child		– .2140 (1.42)	.2056 (1.82)
Female youth with own child		– .0422 (0.95)	.1055 (1.10)
Denver	.0406 (1.28)		– .0361 (0.47)
Phoenix	.0979 (2.59)		.0308 (0.43)
Cincinnati	– .0196 (0.71)		– .0449 (1.23)
Louisville	– .0235 (0.62)		– .0140 (0.35)
Baltimore	.0000 (–)		.0000 (–)
Cleveland	.0074 (0.23)		– .0560 (0.84)
Mississippi pilot	.0203 (0.49)		.2166 (1.15)
Mississippi control	– .0261 (0.67)		.0973 (1.04)
Urban sites combined		.0000 (–)	
Mississippi combined		– .1422 (5.08)	
B_0 for LnWage in hours equation		482.7 (5.09)	

[a]The wage offer equation is estimated jointly with the probit by a maximum likelihood technique which accounts both for possible selection and nonnormal residuals in the wage equation. W^* is calculated from a truncated normal for hours, in which B_0, the estimated coefficient for LnWage, is used to deflate the coefficients for the exogenous variables determining W^*. The standard error in the hours equation is 169.1. The coefficients for DI are calculated from the probit by using the coefficient for the exogenous variable identifying the wage offer to identify the standard error in the probit, and using this value and the (already calculated) estimates of the determinants of W^* to solve for the determinants of DI. For the LnWage equation only, the coefficients are as estimated when the right hand side variables are expressed as deviations from their means (source: Farkas, Stromsdorfer, and Olsen, 1979).

levels), the available jobs were rationed in close to a random manner. Of course, our table C13.2 estimates do not test Rees and Gray's sibling employment variables, but they do corroborate the results of those who have found relatively little effect of family income on youth employment.

Youth labor markets are probably characterized by an excess of supply over demand at the prevailing wage. Accordingly, Rees and Gray's attention to nonprice mechanisms for rationing jobs represents a potentially important area for further development. We hazard a guess, however, that personal and family characteristics other than parents' job contacts are of greatest importance for the allocation of the available employment among youths from low-income households.

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