CONCLUSIONS

These results strongly confirm the first two hypotheses in chapter 4. The individual's position within class relations, measured by either the class dummies and number of employees or the dummies alone, clearly has a significant impact on income, independent of occupational status (hypothesis 1.1); and, net of education, the impact of class on income is considerably greater than the effect of status on income (hypothesis 1.2). Thus, even at the individual level of analysis, location within the social relations of production is a relatively powerful predictor of income.

There are several things which these results do not indicate. They do not indicate that class alone is sufficient for understanding income inequality at the individual level. Class, as we have measured it, accounts for only 20% of the variance in total annual income. While this proportion would undoubtedly be increased if we had more refined measures of class locations and contradictory locations within class relations, still it is clear from the data that a great deal of the total variation in incomes occurs within classes.

The data also do not indicate that occupational status, or other metrics of occupational position, are inconsequential for understanding income variation. Occupation, as an indicator of position both within the labor market and within ideological relations, clearly plays a role in determining individual income, as reflected in the fact that occupational position generally does account for some of the variance in income even when one controls for class and other variables at the individual level of analysis.

The individual level of analysis, however, is not the heart of a Marxist theory of income determination. Showing that class compares favorably with status as a predictor of individual income is important mainly in convincing people that class is worth studying. This chapter, I hope, has accomplished this minimal task.

We can now shift our terrain to the really interesting questions: the ways in which class structurally mediates the income determination process.

6

Class and Income

THE LOGIC OF THE ANALYSIS

In chapter 5 we analyzed the relative explanatory power of class and status within individual income determination equations. The proportions of explained variances compared were all variances in individual income. In this chapter the unit of analysis shifts from the individual as such to the class structure itself. While the data that we will explore are all tagged onto individuals, the analysis centers on structural positions, not on the individuals who fill those positions.

The logic of such an analysis might be clearer if we look at an example other than the investigation of class structure. Suppose we were interested in studying various structural characteristics of business organizations. In particular, we might be interested in the differences between large, bureaucratically organized corporations and small, less bureaucratically structured businesses. One could hypothe-

size that, for a variety of reasons, pay scales in the bureaucratic organization are likely to be much more closely tied to formal educational credentials than they are in the smaller, unbureaucratic organizations. Two empirical strategies could be adopted to test this hypothesis. We could look at the formal pay scales and job requirements in the business records of large and small firms and use these records to estimate the relationship between income and education in the two types of businesses. Or, if those records were unavailable, we could conduct a survey of the personnel in the two types of firms and use individual-level data to estimate the returns to educational credentials. In both cases, the resulting regression equations must be seen as tapping structural characteristics of the firms rather than the income determination process of individuals.

The fact that the data are attached to individuals does not imply that the resulting regressions are based on models of individual units of analysis. Indeed, these regression equations would be extremely misleading if they were interpreted as reflecting individual returns to education rather than as characterizing structural differences between firms. Let us suppose, in the example of the two types of firms, that educational credentials were themselves one of the important criteria determining the firm in which the individual worked. In such a situation, the estimates of returns to educational credentials *within* each firm would tell us very little about the total relationship of education to income for individuals, even though these regressions might tell us a great deal about the structural differences between firms.

To state this issue in slightly more technical terms: the correct specification of a regression equation for an analysis of the structural differences between firms might be a totally incorrect specification of the equations for an analysis of individuals. Throughout the analysis which follows, positions within class relations should be viewed as quite analogous to the firms in the above example. They constitute empty places within the class structure and the hypotheses are primarily about the structural characteristics of the empty places as such, not about the individual-level processes that occur within those class relations. Much confusion in the analysis which follows will be avoided if it is remembered that the equations are not being specified at the level of individuals as units of analysis, but at the level of classes.

SPECIFICATION OF THE EQUATIONS

The argument about the logic of a structural analysis is critical if we are to specify the equations correctly. In chapter 3 we noted that the

basic directions that a number of causal processes might take in an individual-level model are reversed in a model that operates at the level of class structures. For example, in an individual-level model, social background is seen as a cause of education, and both education and background as a direct cause of income. Since education appears as an intervening variable between background and income, the equation would be misspecified if the background variables were left out. That is, potential biases in the magnitude of the education effects would be introduced by not controlling for social background since some of the apparent education effects should be properly interpreted as effects of the social background. Within a model of income determination at the level of class structure, in contrast, education acts as a *selective mechanism* on the social background characteristics of people recruited into class positions. (In a model at the level of social structure, causation is not understood in simple temporal terms, and the expression "intervening variable" is less appropriate, but one could regard social background as an intervening variable between education and income.) Therefore, the correct specification of the full effect of education on income *at the level of classes as units of analysis* would not include social background variables as controls. Again, unless classes are viewed as legitimate units of analysis in their own right and not simply as variables influencing individuals, then the analysis which follows will make little, if any, sense.

Most of the analysis which follows will center on three basic regression equations, each of which will be estimated *separately within each of the class categories* we are studying:

$$\text{Income} = a + b_1 \text{ Education} \tag{1}$$

$$\text{Income} = a + b_1 \text{ Education} + b_2 \text{ Occupational Status} + b_3 \text{ Age}$$
$$+ b_4 \text{ Seniority} + b_5 \text{ Father's Status} + b_6 \text{ Father's Education}$$
$$+ b_7 \text{ Parental Economic Condition} \tag{2}$$

$$\text{Income} = a + \sum_{i=1}^{7} b_i X_i + b_8 \text{ Total Annual Hours Worked}, \tag{3}$$

where X_1 represents the variables in equation (2). (These variables are described in appendix B.) The education variable will be entered into these equations in two forms: first, as a single, 8-level educational credential scale, and second, as a series of dummy variables. Income, throughout this analysis, is measured by total annual income from all sources in unlogged dollars.[1] In several places we will estimate

[1]As in the analysis in the previous chapter, all the equations in this chapter were also run using several other measures of income: average income over the number of years

additional equations, but these three will comprise the heart of the analysis.

These equations will be used to compare class categories in two ways:

1. The coefficients of the education variable will be used as the basis for comparing the income returns to education among different classes. In the unstandardized regression equation, this coefficient indicates how many dollars of additional income an individual *within a given class location* would expect for a unit increase in education. Comparing these coefficients, therefore, enables us to test the various hypotheses concerning different returns to education within different class locations.

2. The equations will also enable us to compare the expected incomes of individuals within different class locations, controlling for various individual characteristics. I shall refer to these comparisons as analyses of the "gaps" in income between classes. Depending upon the specific analysis, two different measures of this gap will be employed. The first, to be referred to as the "average gap" in income between classes, estimates this gap at values of the control variables equal to the average of the mean values of these variables for the two classes being compared. Thus, for example, if we were calculating the average income gap between workers and managers using equation (1), this gap would be measured at a level of education, $(\bar{E}_w + \bar{E}_m)/2$, where $\bar{E}_w$ and $\bar{E}_m$ are the mean levels of education for workers and managers, respectively. The second measure of the gap, referred to as the "standardized income gap," estimates the gap at a level of control variables equal to the most privileged category in the comparison. In the above example, this would mean estimating the expected difference between workers and manager incomes at education $= \bar{E}_m$. The rationale for these different measures of the income gap between classes, and the formal statistical procedures that will be used to test the significance of such gaps, are discussed in appendix C.

Equation (1) above will be used to provide the basic estimates of the returns to education within the various class positions. This equation provides the best measure of the overall relationship between education and income within a class.

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worked during the previous seven years, annual earnings, and imputed hourly earnings. With very marginal exceptions, all of the results which will be reported here are unaffected by the specific version of the income variable employed. The only situation in which any discrepancy of note appeared was in the analysis of hypothesis 4.1 using the imputed hourly wage variable in equation (2) (see Wright, 1976b, pp. 198–201).

Equation (2) serves two basic purposes. First, it will be used to see if the differences in returns to education between classes based on equation (1) are affected by the addition of various control variables. If in fact classes are not real structures, if they are not legitimate objects of investigation or units of analysis, but simply aggregations of the characteristics of the individuals we have classified into classes, then controlling for these various individual characteristics should substantially reduce the differential returns to education across classes. Equation (2), therefore, can be considered an indirect way of validating the underlying claim that classes are indeed real structures, irreducible to the characteristics of individuals.

Secondly, equation (2) will be used to see whether the differences in mean incomes between classes disappear as controls are added. This equation will, therefore, be the basis for analysis of income gaps between class categories. As in the analysis of returns to education, the hypotheses discussed in chapter 3 argue that the differences in incomes between classes are not a consequence of the characteristics of the individuals who occupy class positions, but rather are consequences of the structure of class relations as such. If this is true, then there should still be significant income gaps between classes in equation (2).

Finally, equation (3) is included in order to see whether or not the results from the analysis of equation (2) are simply consequences of the different number of hours worked by people in different class positions. If the income gap remains in equation (3), this gap can be interpreted as reflecting an income privilege or income discrimination component of total income (among wage earners) as discussed in chapter 4. To state the issue in more conventional Marxist terminology: in equation (3) the income gaps between managers and workers, or between races and sexes within either the managerial or working-class location, can be interpreted as reflecting differences in rates of exploitation.

OVERVIEW OF THE RESULTS

Figure 6.1 graphically presents the simple regression of annual income on education for the basic class categories in our analysis—workers, managers and supervisors, employers, and the petty bourgeoisie. Table 6.1 presents the coefficients for the regression of annual income on the variables in equation (3) for each of the class categories we shall investigate. The constant term in these equations is evaluated at the mean values of the independent variables for em-
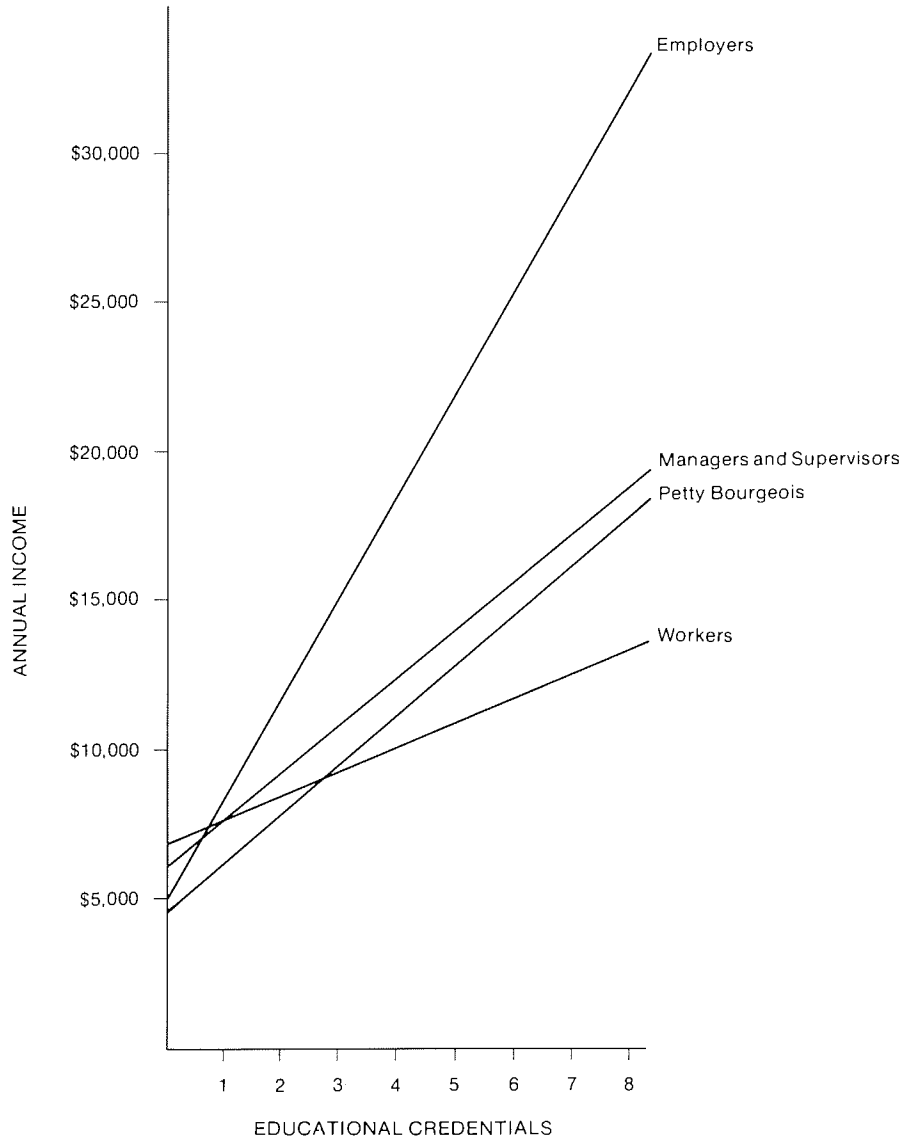
Figure 6.1. Returns to education within class positions. Note: Educational credentials are defined as follows: 0 = no education; 1 = some elementary; 2 = elementary; 3 = some high school; 4 = high school; 5 = high school + nonacademic; 6 = some college; 7 = college; 8 = graduate training. (*Source: Data from Panel Study of Income Dynamics. Figure courtesy of the UW Cartographic Laboratory.*)

(Graph: ANNUAL INCOME on vertical axis, $5,000 to $30,000; EDUCATIONAL CREDENTIALS on horizontal axis, 1 to 8. Lines labeled: Employers, Managers and Supervisors, Petty Bourgeois, Workers.)

TABLE 6.1
Regressions of Taxable Income on Selected Variables

Class Category	Adjusted Constant[a]	Education	Occupational Status	Age	Seniority	Annual Hours Worked	Father's Education	Father's Occupational Status	Parents' Economic Condition	R²
Workers (N=1715)										
B	$16,069	$655	$68	$122	$124	$3.2	$249	$-30	$263	.369
(se)	(204)	(93)	(7)	(11)	(18)	(.2)	(89)	(8)	(87)	
Beta		.20	.25	.27	.16	.32	.07	-.09	.07	
All managers/supervisors (N=1014)										
B	17,583	1,169	99	140	127	2.6	-251	29	-422	.372
(se)	(255)	(153)	(11)	(21)	(29)	(.3)	(143)	(12)	(152)	
Beta		.25	.28	.21	.13	.18	-.05	.07	-.08	
Supervisors (N=535)										
B	15,451	856	55	78	176	2.7	-157	28	-513	.349
(se)	(312)	(161)	(11)	(21)	(31)	(.4)	(170)	(13)	(166)	
Beta		.26	.21	.17	.23	.25	-.04	.09	-.12	
Managers (N=479)										
B	18,640	1,403	116	184	80	1.5	-379	29	-291	.339
(se)	(392)	(20)	(37)	(48)		(.6)	(216)	(18)	(246)	
Beta		.27	.27	.24	.07	.10	-.08	.06	-.05	
Petty bourgeoisie										
B	16,307	1,375	176	-12	227	1.00	1,768	-100	-501	.317
(se)		(595)	(40)	(83)	(82)	(1.0)	(637)	(50)	(704)	
Beta		.27	.44	-.02	.29	.09	.27	-.20	-.07	
Employers										
B	25,711	2,137	304	266	90	-.08	-1,465	-19	2,974	.256
(se)	(1,246)	(820)	(61)	(151)	(159)	(1.6)	(814)	(73)	(939)	
Beta		.18	.33	.14	.04	.00	-.12	-.02	.20	

Source: Data from Panel Study of Income Dynamics.
B = Raw coefficient
(se) = Standard error
Beta = Standardized coefficient
[a] The constant term in these equations has been adjusted to the mean values of the independent variables for employer. The difference between classes on this adjusted constant constitutes the "standardized income gap" defined in chapter 6.

ployers, and thus the difference in constants can be interpreted as the difference in expected income between classes if all classes shared the employer's means on the independent variables (i.e., standardized income gaps). These regressions constitute the heart of the results that we shall try to unravel in the rest of this chapter.

The presentation and discussion of the results will basically follow the order of the hypotheses presented at the end of chapter 4. We shall begin by comparing the working class and the contradictory location between the working class and the bourgeoisie (managers/supervisors). More refined analysis of the internal structure of the managerial category will be left for chapter 7. The comparison of workers and managers/supervisors will be followed by a brief analysis of the petty bourgeoisie, and then a more extensive discussion of the hypotheses involving small employers.

MANAGERS/SUPERVISORS AND WORKERS COMPARED

Hypothesis 2.0. *Managers/supervisors will have higher incomes than workers, even after controlling for education, seniority, family background, and occupational status.*

The basic strategy for testing this hypothesis will be to analyze the "average income gaps" between workers and managers/supervisors, between workers and mere supervisors and between workers and proper managers for the three regression equations discussed above. In the comparison of workers and managers/supervisors, the equations will be estimated using the six education dummy variables as well as the single education scale. The results are presented in Table 6.2.

Several generalizations can be drawn from this table:

1. There is a highly significant gap in income between workers and managers/supervisors and between workers and managers for all three regression equations. In every case these gaps are significant at the .001 level. This means that workers and managers/supervisors with equal levels of education, occupational status, age, seniority, and family background (set at the average of their respective class means on these variables) will still differ significantly in expected incomes.

2. The gap in income between workers and mere supervisors disappears completely in equations (2) and (3). This reflects the class position of mere supervisors as a marginal category located right at the boundary of the working class. As was suggested in chapter 4, many

TABLE 6.2
Analysis of Income Gaps for Comparisons of Total Annual Income of Workers with Managers and Supervisors

Class Comparisons	Mean Total Income	Expected Income, Adjusted[a] for Variables in					
		Eq 1	Eq 1[b]	Eq 2	Eq 2[b]	Eq 3	Eq 3[b]
Workers vs. Managers/Supervisors							
Managers + supervisors	$15,256	$14,571	$14,613	$13,730	$13,758	$13,444	$13,469
Workers	10,976	11,322	11,339	11,978	11,975	12,376	12,365
Income gap	4,280	3,249	3,274	1,752	1,783	1,068	1,104
% of difference in mean income eliminated by controls		24%	24%	59%	58%	75%	74%
t-value of income gap		11.6***	11.7***	6.9***	7.0***	4.3***	4.4***
Workers vs. Managers							
Managers	$18,090	$16,903		$15,613		$15,343	
Workers	10,976	11,461		12,391		12,966	
Income gap	7,114	5,442		3,222		2,377	
% of difference in mean income eliminated by controls		24%		55%		67%	
t-value of income gap		13.1***		8.0***		5.9***	
Workers vs. Supervisors							
Supervisors	$12,266	$12,064		$11,705		$11,513	
Workers	10,976	11,177		11,557		11,782	
Income gap	1,290	853		148		−269	
% of difference in mean income eliminated by controls		34%		89%		121%	
t-value of income gap		2.9**		ns		ns	

Source: Data from Panel Study of Income Dynamics.
Independent variables: Eq 1 = education only
    Eq 2 = education, seniority, age, background, and occupational status
    Eq 3 = Eq 2 + annual hours worked
Significance levels on a one-tailed test:
*** .001
** .01
* .05
ns $t < 1$
[a] Incomes are adjusted to the average of the mean values of the independent variables for the groups being compared.
[b] Using education dummies.

such supervisors should probably be placed within the working class itself.

3. The use of dummy variables instead of the single education variable has essentially no effect on the income gaps between workers and managers/supervisors. In the simple regression of annual income on education, for example, the gap using the education scale is $3249, whereas using the six education dummy variables it is $3274. When the single education scale is used, the income gap tells us the expected difference in income when both classes have the same *mean* education. When education dummy variables are used, the income gap indicates the expected difference in income when both classes have the same *distribution* of individuals across education categories (although not necessarily the same income returns for each education category).[2] The results clearly indicate that it does not matter which way education is measured for the comparison of workers and managers/supervisors.

4. While the gaps in income between workers and managers remain quite significant in equations (2) and (3), the total gap (i.e., the total difference in gross mean incomes) is considerably reduced as controls are added. Overall, about 55% of the difference in mean incomes is eliminated when all of the variables in equation (2) are held constant, and 67% when the number of hours worked annually is also held constant in equation (3).[3]

This reduction in the total income gap in equations (2) and (3) suggests that at least part of the overall income differences between class positions involves, in one way or another, the characteristics of the individuals who fill those positions. Two sorts of interpretations of these results are possible. One line of reasoning would argue that this reduction in the income gap indicates that the overall difference in mean incomes between classes is in part an "artifact" of the distribution of personal characteristics within classes. These personal attributes, not the class positions in their own right, are the "real" cause of much of the observed differences between classes.

[2]In our analysis, this distribution consists of the average of the percentage of workers and of the percentage of managers who fall into a particular educational category.

[3]In interpreting these figures it must be remembered that we are evaluating the income gap at the mid-point between the mean values of the independent variables for workers and for managers. If we evaluated the gap at the managers' means, the proportion of the total difference between gross mean incomes that would be eliminated would be less than in Table 6.2. For example, the gap in income for equation (3) would only be 55% rather than 67% of the total difference in income. As explained in appendix C, the gap is being assessed at this average level of the independent variables rather than at the managers' means since we are interested in testing propositions about the structural differences between workers and managers at a typical rather than an extreme point.

An alternative view regards the distribution of the characteristics of individuals occupying class positions as itself largely a consequence of class relations. The bourgeoisie, after all, hires both workers and managers, and clearly has a stake in selecting certain characteristics for both. The result is that there will be a different mix of family backgrounds, age, occupational statuses, etc., for people who end up in managerial or working-class positions. This logic suggests that the total difference in mean incomes between classes can be broken down into two parts: one reflecting the *direct* effects of class on income, the other reflecting the *indirect* effects of class position as it operates through the characteristics of the individuals selected into the class slots. In our analysis of income gaps, the direct effect roughly corresponds to the gap in income that remains after individual characteristics are held constant, while the indirect effect corresponds to the difference between the total difference in mean incomes and this gap. In the example of total annual income, about two thirds of the total difference in income between workers and managers can be viewed as representing this indirect effect, and one third the direct effect of class.[4]

There is no way of empirically distinguishing between these two interpretations in the present data.[5] All that the data "show" in an empiricist sense is that income differences between classes are reduced by statistically controlling for individual characteristics. The results do not indicate whether such a reduction should itself be viewed as a consequence of class relations or as processes directly springing from a logic of individual action, independent of class relations.

In any event, regardless of which interpretation is chosen, all of these results strongly support hypothesis 2. Managers clearly do have

[4]In order to make this link between direct and indirect effects of class and the income gaps as we have measured them it is necessary to assume that the coefficients in the regression equations are simple characteristics of the class positions, and that they would not change if the characteristics of the individuals occupying those class positions changed. This grossly ahistorical, static assumption is really only useful for heuristic purposes, but once it is made, we can partition the total difference in incomes into a component reflecting the distribution of individual characteristics and a component directly reflecting the class positions as such.

[5]More complex ways of partitioning the total gap in income between groups, such as the method suggested by Masters (1975, pp. 104–6), in which the difference in mean incomes is divided into three parts, due respectively to differences in the means of the independent variables, in slope coefficients, and in the interaction of the two, will not help us here. The issue is not precisely how much of the total difference in income between classes involves individual characteristics, but rather how such individual characteristics should be viewed theoretically. Are they characteristics of the structure as such (through a process of structural determination as described in chapter 3) or is the structure simply a reflection of individual processes?

higher incomes than workers, and this difference remains significant even after controlling for a wide range of other variables. The income determination process within the contradictory class location between the working class and the bourgeoisie, therefore, seems to generate income privileges when compared to that within the working class. If controlling for all of the variables in equation (3) can be interpreted as holding constant the value of labor power, and if it is assumed that, on the average, labor power within the working class proper is exchanged close to its value, then these results indicate that managers receive an income which is systematically above the value of their labor power.

Hypothesis 4.1. *The income returns to education will be much greater within the managerial category than within the working class, even after controlling for age, occupational status, family background, etc.*

Table 6.3 presents, for each class category, the three basic regression equations. Figure 6.2 graphically presents the results for the simple regression of annual income on education for workers, managers, and supervisors. Table 6.4 presents the statistical tests of differences of returns to education for hypothesis 4.1.[6]

Several generalizations can be made on the basis of these results:

1. Workers, managers, and supervisors all have highly significant returns to education, regardless of which regression equation is estimated. While adding the controls in equations (2) and (3) does reduce the education coefficients somewhat, the partial education coefficients in these equations are still statistically significant.

2. Workers have significantly lower returns to education than supervisors and managers combined and than managers examined separately in the simple regression of income on education. The returns to education for workers in these equations are generally about half the returns for managers/supervisors. When the various controls in equations (2) and (3) are added, the returns to education for both workers and managers/supervisors decline, but the workers' returns remain about half the returns for managers/supervisors. These results strongly support hypothesis 4.1.

3. The various controls in equations (2) and (3) do not reduce the differences in returns to education by more than 30–40%. In terms of the preceding discussion about the income gaps between workers and

[6]The means and standard deviations of all the variables used in these equations and the correlation matrices used to generate the equations can be found in Wright (1976b, pp. 320–26).

TABLE 6.3
Regression Equations Within Class Categories with Annual Taxable Income as Dependent Variable

	Unadjusted Constant	Education	Occupational Status	Age	Seniority	Father's Education	Father's Occupational Status	Parents' Economic Condition	Annual Hours Worked	R^2
Workers										
Eq 1: B	$7,193	$851.4								.066
(se)		(77.3)								
Beta		.26								
Eq 2: B	214	641.2	$71.6	$118	$132					.267
(se)		(100)	(7.5)	(12)	(20)					
Beta		.19	.26	.26	.17					
Eq 3: B	−6,627	655.1	67.9	122	124	$166	$−30	$270	$3.2	.369
(se)		(92.8)	(7.0)	(11)	(18)	(96)	(8.2)	(94)	(.19)	
Beta		.20	.25	.27	.16	.05	−.09	.07	.32	
Managers/supervisors										
Eq 1: B	6,382	1,689.1								.135
(se)		(133.5)								
Beta		.37								
Eq 2: B	−1,421	1,200.1	104	136	123					.340
(se)		(157.3)	(11.2)	(21)	(30)					
Beta		.26	.30	.21	.12					
Eq 3: B	−7,145	1,168.7	98.6	140	127	−302	27	−369	2.6	.373
(se)		(153.4)	(11.0)	(21)	(29)	(146)	(12)	(156)	(.35)	
Beta		.25	.28	.21	.13	−.07	.07	−.07	.18	

(continued)

TABLE 6.3 (continued)

	Unadjusted Constant	Education	Occupational Status	Age	Seniority	Father's Education	Father's Occupational Status	Parents' Economic Condition	Annual Hours Worked	R^2
Supervisors										
Eq 1: B	8,065	854.6								.065
(se)		(140.4)								
Beta		.25								
Eq 2: B	2,650	816.8	59.7	78	171	−207	21	−459		.286
(se)		(168.6)	(12.0)	(22)	(33)	(178)	(14)	(173)		
Beta		.24	.23	.17	.22	−.06	.07	−.11		
Eq 3: B	−3,468	855.8	54.5	78	176	−157	28	−512	2.7	.349
(se)		(161)	(11.4)	(21)	(31)	(170)	(14)	(166)	(.37)	
Beta		.26	.21	.17	.23	−.05	.09	−.13	.25	
Managers										
Eq 1: B	6,481	2,081.6								.155
(se)		(222)								
Beta		.39								
Eq 2: B	−3,285	1,466.0	114.6	177	78	−403	29	−246		.330
(se)		(258)	(20)	(37)	(48)	(217)	(18)	(247)		
Beta		.28	.27	.23	.07	−.08	.07	−.04		
Eq 3: B	−6,903	1,402.7	115.8	184	80	−379	29	−291	1.5	.339
(se)		(258)	(20)	(37)	(48)	(216)	(18)	(246)	(.60)	
Beta		.27	.27	.24	.07	−.08	.07	−.05	.10	
Petty bourgeoisie										
Eq 1: B	4,680	1,781.2								.123
(se)		(433.3)								
Beta		.35								
Eq 2: B	−3,922	1,534.3	169.5	−13	241	1,703	−110	−410		.310
(se)		(573.6)	(39.9)	(83)	(80)	(634)	(48)	(697)		
Beta		.30	.42	−.02	.31	.26	−.22	−.06		
Eq 3: B	−5,967	1,375.2	175.6	−12	227	1,769	−100	−501	1.0	.317
(se)		(594.8)	(40.4)	(83)	(82)	(637)	(50)	(703)	(.99)	
Beta		.27	.44	−.02	.29	.27	−.20	−.07	.09	
Employers										
Eq 1: B	5,028	3,843.2								.107
(se)		(698.7)								
Beta		.33								
Eq 2: B	−17,711	2,135.8	303.5	266	91	−1,460	−19	2,976		.256
(se)		(817.6)	(61.0)	(151)	(157)	(805)	(73)	(935)		
Beta		.18	.33	.14	.04	−.12	−.02	.20		
Eq 3: B	−17,498	2,137.1	303.6	266	90	−1,465	−19	2,974	−.073	.256
(se)		(819.8)	(61.1)	(151)	(159)	(814)	(73)	(939)	(1.6)	
Beta		.18	.33	.14	.04	−.12	−.02	.20	.00	

Source: Data from Panel Study of Income Dynamics.

B = Raw coefficient

(se) = Standard error

Beta = Standardized coefficient

Independent variables: Eq 1 = education only

Eq 2 = education, seniority, age, background, and occupational status
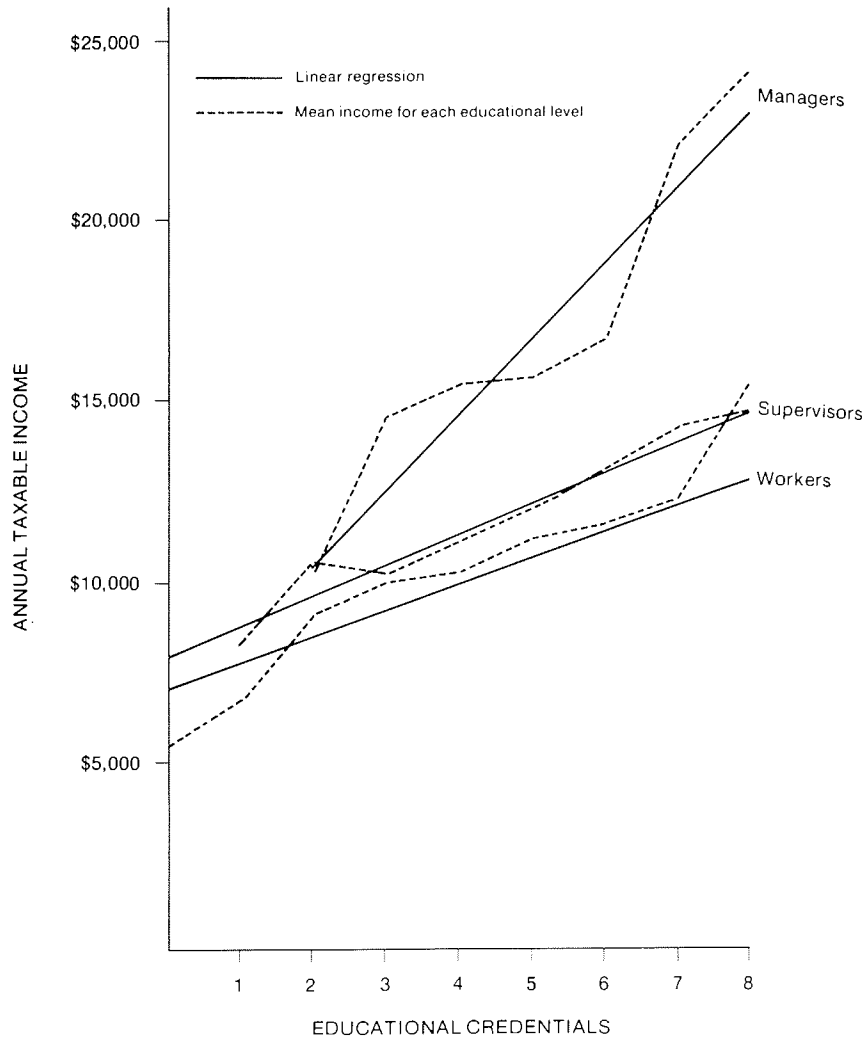
Eq 3 = Eq 2 + annual hours worked

Figure 6.2. Relationship of income to education for workers, supervisors and managers. Note: Educational credentials are defined as follows: 0 = no education; 1 = some elementary; 2 = elementary; 3 = some high school; 4 = high school; 5 = high school + nonacademic; 6 = some college; 7 = college; 8 = graduate training. (*Source: Data from Panel Study of Income Dynamics. Figure courtesy of the UW Cartographic Laboratory.*)

TABLE 6.4
Returns to Education for Workers and Managers/Supervisors

Class Comparisons	Income Returns in		
	Eq 1	Eq 2	Eq 3
Workers vs. supervisors/managers			
Diff. in educ. coeffs.	$838	$559	$514
t-value of difference	5.5***	3.0**	2.9**
Worker's slope as % of mgrs/sups.	50%	53%	56%
% of slope diff. in eq 1 eliminated by controls		33%	39%
Workers vs. managers			
Diff. in educ. coeffs.	$1,231	$825	$748
t-value of difference	5.2***	3.0**	2.7**
Worker's slope as % of mgrs/sups.	41%	44%	47%
% of slope diff. in eq 1 eliminated by controls		33%	39%
Workers vs. supervisors			
Diff. in educ. coeffs.	$4	$176	$201
t-value of difference	ns	ns	1.1
Worker's slope as % of mgrs/sups.	99%	79%	77%

Source: Data from Panel Study of Income Dynamics.
Independent variables: Eq 1 = education only
  Eq 2 = education, age, seniority, background, and occupational status
  Eq 3 = Eq 2 + annual hours worked
Significance levels on a one-tailed test:
*** .001
** .01
* .05
ns $t < 1$

managers/supervisors, this fact implies that most of the difference in education slopes is a direct consequence of class position per se.

4. Workers and mere supervisors differ hardly at all in any of the equations in Table 6.3. Furthermore, if we look at the coefficients of the other variables in equations (2) and (3), workers and supervisors differ significantly only on returns to age. Since both workers and supervisors have a significant income gap only in the simple regression of income on education, it seems fairly safe to conclude that many, perhaps most, supervisors probably belong in the working class. As a

result, in the rest of this chapter we will examine only proper managers in comparisons involving the contradictory class location between the working class and the bourgeoisie, rather than the combined manager/supervisor category.

One possible objection to these results is that by including age in the equations simply as an additive term, we have ruled out the possibility of more complicated cohort-effects in which the returns to education are different for different cohorts. The different returns for workers and managers could still therefore be "artifacts" of the age composition of the two classes, even though different returns are observed in equations (2) and (3).

 To deal with this objection, equations (1)–(3) have been estimated separately for young, middle-aged, and older workers and managers. The results appear in Table 6.5. The simple regressions of income on education are presented graphically in Figure 6.3.

 Among workers and managers over 50 and between 35 and 50, managers receive significantly higher returns to education in all three regression equations. Among workers and managers under 35, the returns differ hardly at all, although managers still receive significantly more income than workers at every level of education. These similar returns to education among younger workers and managers are entirely consistent with the general interpretation of the returns to education for workers and managers discussed in chapter 4. Among managers, it was argued, education serves as a screening device which sorts people into different levels of the hierarchy, and this is the basis for the high returns to education for managers as a whole. Among young managers at the beginning of their careers, this credential-screening process has not yet fully worked itself out. It is only after enough time has elapsed for a series of promotions to have occurred that the full effects of the relationship between education and position in the hierarchy can be felt. Thus, among younger managers it would not be expected that there would be particularly high returns to education.

 A second objection to these results is that they may simply reflect a single, nonlinear relationship between income and education among all wage earners. Since workers would tend to be concentrated at the lower end of the education scale and managers at the top, the linear regression among workers would necessarily appear flatter than among managers. Two results suggest that this is not a plausible interpretation. First, in Figure 6.2 it is clear by inspection that the mean incomes for different levels of education among workers and managers are rea-

TABLE 6.5
Returns to Education for Workers and Managers, by Age

Class Comparisons	Income Returns in						Mean Education	Mean Income
	Eq 1	R^2	Eq 2	R^2	Eq 3	R^2		
35 years and under								
Workers	$683	.06	$347	.29	$460	.41	4.9 yr	$9,338
Managers	1,021	.05	389	.26	393	.27	5.7	14,460
Difference in coeff.	338		42		−67			
t-value of difference	ns		ns		ns			
36–50 years								
Workers	1,464	.18	427	.29	431	.37	4.1	13,269
Managers	2,691	.26	1,721	.34	1,388	.39	5.7	20,878
Difference in coeff.	1,227		1,294		957			
t-value of difference	3.3***		2.7**		2.0*			
51 years and over								
Workers	1,813	.22	891	.30	653	.39	3.5	12,268
Managers	2,583	.29	2,164	.36	2,168	.36	5.2	20,094
Difference in coeff.	770		1,273		1,515			
t-value of difference	1.8*		2.1*		2.6*			

Source: Data from Panel Study of Income Dynamics.
Independent variables: Eq 1 = education only
        Eq 2 = education, age, seniority, background, and occupational status
        Eq 3 = Eq 2 + annual hours worked

Significance levels on a one-tailed test:
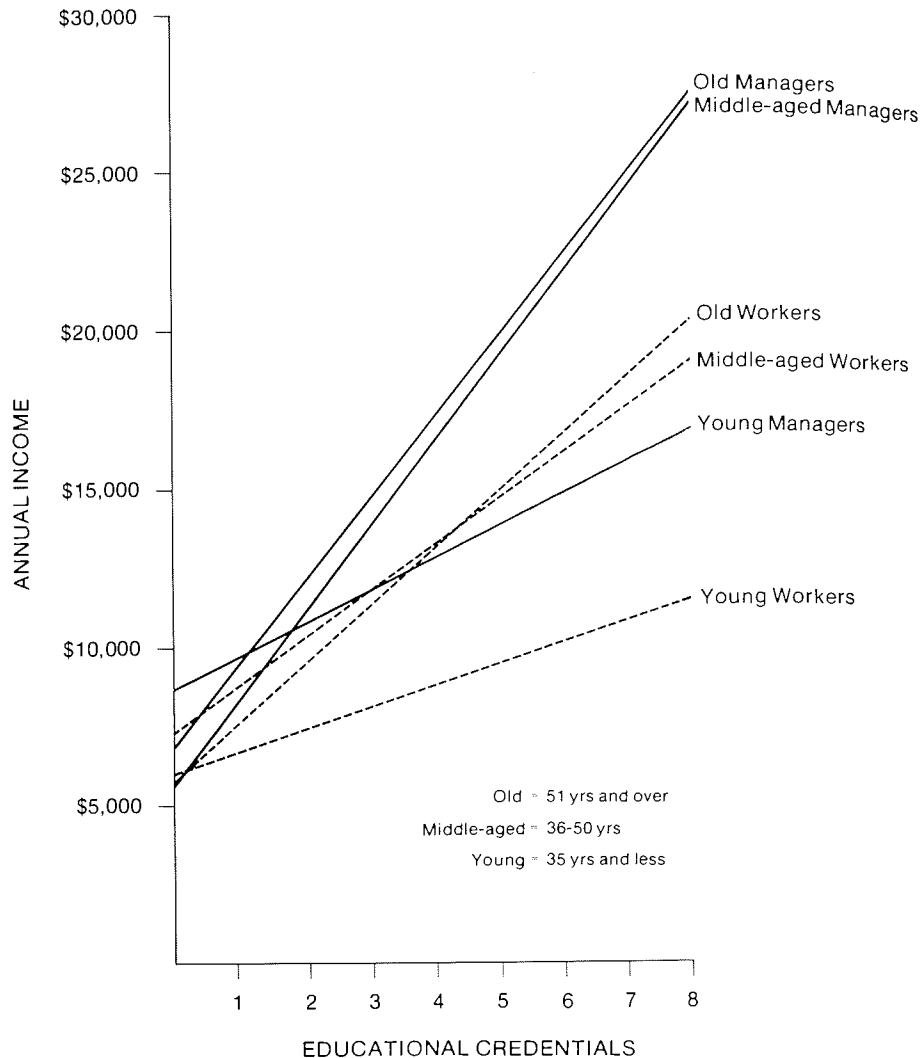*** .001
 ** .01
  * .05
 ns $t < 1$

$30,000

$25,000

$20,000

$15,000

$10,000

$5,000

ANNUAL INCOME

Old Managers
Middle-aged Managers

Old Workers

Middle-aged Workers

Young Managers

Young Workers

Old = 51 yrs and over

Middle-aged = 36-50 yrs

Young = 35 yrs and less

1   2   3   4   5   6   7   8

EDUCATIONAL CREDENTIALS

Figure 6.3. Returns to education for managers and workers in different age cohorts. Note: Educational credentials are defined as follows: 0 = no education; 1 = some elementary; 2 = elementary; 3 = some high school; 4 = high school; 5 = high school + nonacademic; 6 = some college; 7 = college; 8 = graduate training. (*Source: Data from Panel Study of Income Dynamics. Figure courtesy of the UW Cartographic Laboratory.*)

sonably linear and cannot be interpreted as points on a single curve. Secondly, as indicated in Table 6.6, the R^2 in equations using education dummy variables is virtually identical to the R^2 using the single education scale. This again indicates that the relationship between education and income is fairly linear within the managerial and working-class locations.

A final objection to these results could be that they are a consequence of problems of truncation on the dependent variable. Cain (1976, pp. 1246–47) has effectively demonstrated that the returns to education for low-income employees would generally tend to be less than for all employees simply because we have truncated the group on the dependent variable in the regression. Since workers have less income overall than managers, the comparison between the two in this study could be viewed as a comparison of a truncated category with an untruncated (or at least, less truncated) category.

There are two responses to this objection. First, while it is correct that within the working class income is truncated at the upper end of the income distribution, it is also true that the managerial category would be truncated at the bottom. This would tend to lower the slope for managers, and unless there is reason to believe that the problem of truncation is greater within one category than the other, this would not necessarily explain the differences in returns. Second, and more fundamentally, the truncation problem itself is only a problem if the regressions are interpreted as estimating income determination equations using individuals as the unit of analysis. When the equations are interpreted as measuring characteristics of class *structures*, then truncation becomes irrelevant. The fact that the income of educated workers has a constrained upper limit (i.e., is truncated) is itself a property of the working-class location within the social relations of production. Since we have not allocated individuals into the working class on the basis of their income, and our operationalization of class cannot be construed as artificially truncating the incomes of educated workers, there is no reason to see the education coefficients within the working class as artificially depressed.

All of these results, therefore, are strongly supportive of hypothesis 4.1. The relative income privilege observed among managers in hypothesis 4.0 appears to increase with education—that is, the component of income above the value of their labor power increases with the value of labor power. These results cannot be explained away by the addition of a wide variety of control variables or by arguments of age cohort effects, nonlinearity, or truncation of income.

TABLE 6.6
Returns to Specific Levels of Education for Workers and Managers

| Class Comparisons | Increment in Income Expected from Attaining Education Level[a] | | | | | | | R^2 | |
	2	3	4	5	6	7	8	Using Dummy Variable[b]	Using Single Educ. Scale
Eq 1									
Workers[c]	$2,220	$431	$376	$947	$596	$1,267	$2,691	.073	.066
Managers	—	4,183	1,188	305	1,220	5,385	2,406	.180	.155
Diff. in coefficients		3,752	811	−641	624	4,118	−285		
t-value of diff.		1.6	ns	ns	ns	3.2***	ns		
Eq 3									
Workers	1,819	1,195	561	23	969	−55	864	.369	.369
Managers	—	5,181	1,351	−523	859	3,686	1,273	.354	.339
Diff. in coefficients		3,985	790	−545	−110	3,741	410		
t-value of diff.		1.9*	ns	ns	ns	3.2***	ns		

Source: Data from Panel Study of Income Dynamics.
Independent variables: Eq 1 = education only
　　　　Eq 3 = education, seniority, age, background, occupational status, and annual hours worked

[a]Education levels are: 2 elementary; 3 some high school; 4 high school; 5 high school plus nonacademic training; 6 some college; 7 college degree; 8 graduate training.
[b]This R^2 is based on the regression equation excluding the elementary school dummy variable.
[c]Entries represent the expected increase in income for obtaining a given level of education compared to the previous level of education.

Hypothesis 4.2. *The difference between the managerial category and the working class in income returns to education should be greatest for college and postcollege levels of schooling.*

If the logic underlying hypothesis 4.1 is correct, then one would expect educational credentials to make an especially large difference in incomes between workers and managers at the college and postcollege levels. Table 6.6 indicates how much additional income an individual worker or manager would expect to get for each increment in education, using equations (1) and (3).[7] The results are not entirely as expected. Several findings are worth noting:

1. As expected, a college degree makes a much greater difference to income within the managerial class location than it does to income within the working class. Managers receive over $5000 more than workers do for a college degree in equation (1), and $3700 more in equation (3). Indeed, when all the controls in equation (3) are included, workers actually receive no returns to a college diploma whatsoever.

2. The expectation for graduate training, however, was not supported by the data. Both workers and managers received around $2500 additional income in equation (1) and within a few hundred dollars of $1000 in equation (3) for some graduate training. Two explanations of these results come to mind. First of all, it must be remembered that the working-class category in these equations contains a certain proportion of semiautonomous employees. It would be expected that there would be significantly higher income returns to higher degrees within the semiautonomous employee category than within the working class, and this may have inflated the returns to graduate training, especially since semiautonomous employees are likely to be overrepresented in this education category. Secondly, the education level is "some graduate training," not a graduate degree. The small numbers made it impossible to study separately the returns for actually receiving a credential beyond college, and this may have reduced the returns to managers (the argument was that they should receive especially high returns to credentials, not to education per se).

3. It was totally unexpected that managers should receive so much higher returns to "some high school" than workers. Indeed, while the differences are less significant statistically, the absolute magnitudes of

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·[7]The entries in Table 6.6 were obtained by estimating the equations several times, leaving out a different dummy variable each time. The entries under the high school variable, for example, were estimated in equations in which the "some high school" dummy was left out of the equation; the entries under "some college" were estimated leaving out "high school plus nonacademic training."

the difference in returns to some high school education for managers and workers in equations (1) and (3) are as large as they are for a college degree. I have no coherent explanation for this particular result. It is not simply an artifact of the absence of anyone with less than an elementary school education among managers. When the equations for workers were rerun leaving out both the "elementary" and "some elementary" dummies (in effect combining them into a single "less than some high school" category), the difference between managers and workers remained substantially the same. I suspect that these results reflect rather complex interactions of cohort effects with specific levels of the managerial hierarchy, but such possibilities will have to remain unexplored for the moment because of inadequate data.

Overall, these results suggest that the simple legitimating-credential interpretation of education is not sufficient to explain the differences in returns to education between the managerial class location and the working class. Such legitimation processes undoubtedly play a role, but the data do not support the claim that the managerial returns to education are consistently highest where formal academic credentials are obtained.

THE PETTY BOURGEOISIE

Hypothesis 6.0. *Within the pure petty bourgeoisie, the average level of income should only be slightly greater than within the working class (controlling for education, age, background, etc.) and the returns to education should be very close to those of the working class.*[8]

As the results in Table 6.7 indicate, the data provide at best ambiguous support for the predictions about the petty bourgeoisie. While the returns to education for the petty bourgeoisie are significantly larger than the returns for workers only in equation (1), nevertheless, in both equations (2) and (3) the absolute magnitude of the difference in slopes is relatively large. In fact, in all three regression equations the returns to education for the petty bourgeoisie were larger than for managers/supervisors combined, and nearly as large as for managers taken separately. Unless one adopts a rather naive reliance on *t*-ratios as

[8]There was one outlier in the petty bourgeois class: an individual with a high school education who earned $99,999 a year (the highest level). This is some 8 standard deviations above the mean petty bourgeois income. When this individual is included in the sample, the explained variance in equation (3) is only .11; when he is excluded, the explained variance increases to .32. Because this individual's income is so far above the mean for the petty bourgeoisie, we will exclude this case throughout the analysis.

TABLE 6.7
Income Gaps and Returns to Education for the Petty Bourgeoisie, Compared to Workers and Managers/Supervisors

Class Comparisons	Difference in Mean Incomes	Average Income Gap[a] in			Difference in Education Coefficient		
		Eq 1	Eq 2	Eq 3	Eq 1	Eq 2	Eq 3
Petty bourgeoisie vs. working class	$1,228	$1,518	-$761	-$1,358	$930	$893	$720
t-value		1.8*	ns	1.6	2.0*	1.6	1.2
Petty bourgeoisie vs. managers	-$5,886	-$3,260	-$7,261	-$7,328	-$487	$68	-$28
t-value		3.3***	6.9***	7.0***	ns	ns	ns

Source: Data from Panel Study of Income Dynamics.
Note: A negative entry means that the petty bourgeoisie has a smaller expected income or education coefficient than the class with which it is being compared.
Independent variables: Eq 1 = education only
    Eq 2 = education, seniority, age, background, and occupational status
    Eq 3 = Eq 2 + annual hours worked
Significance levels on a one-tailed test:
*** .001
** .01
* .05
ns *t* < 1
[a]Average income gap is assessed at the average of the means of the independent variables for the groups being compared.

the formal criterion for testing hypotheses, these results do not support the view that the petty bourgeoisie has low returns to education.

The results provide stronger support for the view that the average income of the petty bourgeoisie is close to that of the working class. While in the simple regression of income on education the expected annual income of a petty bourgeois is about $1500 greater than that of a worker (for an education level equal to the average of their respective mean educations), when various other controls are added the expected income drops below that of workers. In every equation, the expected income of a petty bourgeois is significantly below that of managers. The first half of hypothesis 6.0 is thus consistent with the data at hand.

Why should the income returns to education for the petty bourgeoisie be so high? The expectation was that since most petty bourgeois produce for competitive markets, the price of the commodities which they sold would directly reflect the value embodied in them and thus would include a component to cover the costs of producing the skills of the producer. As in the working class, therefore, the income of skilled petty bourgeois would be above that of unskilled petty bourgeois. But there was no expectation that the income of skilled petty bourgeois would rise more rapidly than the costs of reproducing their skills, and thus it was expected that the returns to skills (measured by education) should be similar to the returns within the working class. In both cases competitive pressures would keep the returns to education in line with the costs of (re)producing skilled labor power. So much for the logic of the argument.

My first thought was that perhaps the returns to education were so high for the petty bourgeoisie not because of high-income, well-educated petty bourgeois but because of low-income, poorly educated petty bourgeois. If you look at the mean incomes for each level of education (Figure 6.4), there are indeed two individuals at the bottom of the education scale with very little income. I reran the regressions omitting these cases..The returns to education were virtually the same as in the original regressions. It then occurred to me that the high returns to education might be the result of the high concentration of farmers within the petty bourgeoisie. At least part of the income of farmers takes the form of income in kind, and thus it was possible that the presence of many uneducated farmers in the regression equations could increase the slope of the education variable. So, I reestimated the equations omitting farmers. The returns to education increased rather than decreased.

Undaunted by such negative results, I looked carefully at the detailed occupational and industrial sector breakdowns for the petty
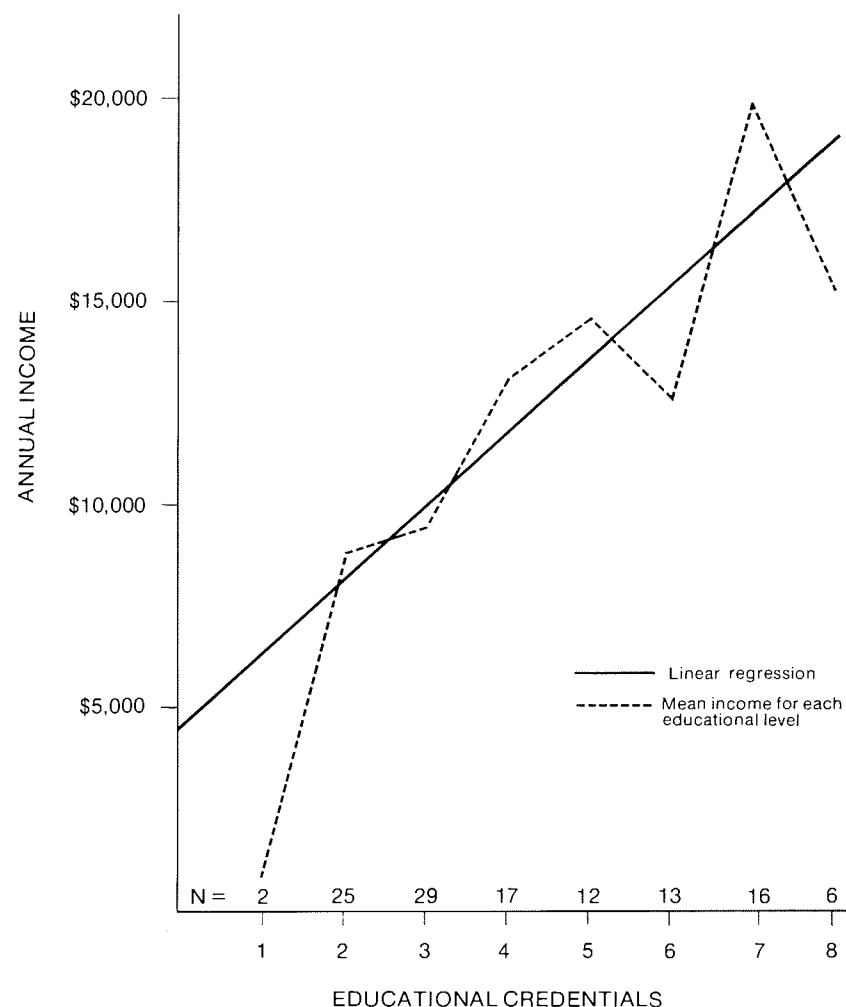
Figure 6.4. Income and education within the petty bourgeoisie. Note: Educational credentials are defined as follows: 0 = no education; 1 = some elementary; 2 = elementary; 3 = some high school; 4 = high school; 5 = high school + nonacademic; 6 = some college; 7 = college; 8 = graduate training. (Source: *Data from Panel Study of Income Dynamics. Figure courtesy of the UW Cartographic Laboratory.*)

bourgeoisie. No obvious explanations emerged. Of course, the more educated petty bourgeois tended to be in occupations characterized by higher levels of income, but as equation (2) indicates in Table 6.7, controlling for occupational status did not eliminate the relatively high returns to education within the petty bourgeoisie. Similarly, control-

ling for industrial sector (by entering a series of industry dummy variables into the regression) did not significantly reduce the returns to education (see Table 6.13).

The inability to "explain away" the high returns to education among the petty bourgeoisie implies that the original conceptualization is probably inadequate. Several possibilities might be worth pursuing in future research. First, there may be some problems in the responses to the question: "Do you work for yourself or for someone else?" Salesmen working on a commission may say that they work for themselves; people who do various kinds of contract work may say that they work for someone else, even though they are in fact self-employed. It is impossible to know the extent to which various kinds of semiautonomous employees (who would be expected to have high returns to education) might in fact be mixed in with the petty bourgeois category as it is currently defined. Secondly, there may be strata within the petty bourgeoisie, like within the small employer category, who work in protected markets of various sorts and thus receive a kind of monopoly rent element in their income. Finally, a much more thorough investigation of the concrete relationship between petty bourgeois producers and capital is necessary to fully understand the income determination process within this class. I have naively treated the class as involving a uniform process of self-earned income and as being uniformly subordinated to monopoly capital through exchange relations (which prevent their income from rising much above that of the working class). While these intuitions may be more or less adequate for the average petty bourgeois producer, they appear to be inadequate for more educated petty bourgeois. In any event, much more detailed study of the petty bourgeoisie is necessary before these processes can be properly sorted out and a better understanding of the relationship of income to education within this class position developed.

SMALL EMPLOYERS

Hypothesis 7.1. *The expected incomes of small employers should be higher than those of either workers or managers, even when controlling for education, etc.*

Table 6.8 presents the results for the analysis of income gaps between employers and managers and workers. These results clearly indicate that employers get considerably more income than either workers or managers, even controlling for all of the variables in equation (3). Between small employers and managers, in fact, these controls reduce

TABLE 6.8
Income Gaps and Returns to Education for Small Employers, Compared to Managers and Workers

Class Comparisons	Difference in Mean Incomes	Income Gaps				Returns to Education					
		Average Gap[a]		Standardized Gap[b]		Difference in Education Coefficient			Returns to Education		
		Eq 1	Eq 3	Eq 1	Eq 3	Eq 1	Eq 2	Eq 3	Eq 1	Eq 2	Eq 3
Employers vs. managers	$7,621	$8,207	$7,070	$7,971	$7,071	$1,761	$670	$734			
t-value		5.9***	5.3***	5.7***	5.4***	2.4**	ns	ns			
Managers as % of employers	70%	69%	72%	69%	72%				54%	69%	66%
% of difference in means elim. by controls		−8%	7%	−4%	7%						
Employers vs. workers	$14,735	$12,530	$6,958	$13,935	$9,642	$2,992	$1,496	$1,482			
t-value		9.0***	4.7***	10.3***	7.6***	4.3***	1.8*	1.8*			
Workers as % of employers	43%	48%	66%	46%	62%				22%	30%	31%
% of difference in means elim. by controls		15%	53%	5%	35%						

Source: Data from Panel Study of Income Dynamics.

Independent variables: Eq 1 = education only
Eq 2 = education, seniority, age, background, and occupational status
Eq 3 = Eq 2 + annual hours worked

Significance levels on a one-tailed test:
*** .001
** .01
* .05
ns $t < 1$

[a]Average gap is assessed at the average of the means of the independent variables of the groups being compared.
[b]Standardized gap is assessed at the mean values of the independent variables for employers.

the overall gap in income by less than 10%. Virtually all of the difference in incomes between these two class positions must be considered a direct effect of the class positions per se. In the comparison between employers and workers, on the other hand, between a third and a half of the difference in income can be attributed to the characteristics of the individuals occupying those class positions.[9] When the income gap is assessed at the employers' mean values on the independent variables, the various controls in equation (3) reduce the gap between workers and employers by about 35%; when the gap is assessed at the average level of the independent variables, it is reduced by about 50% in equation (3). In either case, the direct effect of class position remains large and is highly statistically significant.

Hypothesis 7.2.   *Small employers will have especially high returns to education.*

The education coefficients for employers are presented in Table 6.3. The comparisons with workers and managers appear in Table 6.8. Employers receive significantly greater returns to education than workers in each equation. The difference is especially dramatic in the simple regressions of income on education, where the returns among employers are five times greater than among workers.

The difference between small employers and managers is less marked. Employers receive significantly greater returns in the simple regressions of income on education, but not in the expanded equations. The reasons for this will be clearer when we examine hypothesis 7.3.

Hypothesis 7.3.   *If the industrial sector and occupational status of small employers are held constant, the returns to education will be considerably reduced.*

In chapter 4, it was argued that education would be especially important for small employers' incomes because it created access to specialized, relatively noncompetitive markets. If this logic is correct, then we would expect the returns to education to be substantially reduced when we controlled for industrial sector and occupational status.

Two strategies can be adopted in order to control for industrial sector. First of all, a series of dummy variables for industrial sector could be entered into the regression equation. This in effect eliminates

[9]As in the earlier analysis of the income gap between managers and workers, this is not to suggest that between a third and a half of the gap can be explained by individual-level processes as such, but simply that part of the gap is determined through the characteristics of the individuals selected into class locations.

all of the variance in income that is due to the differences between industries. The slope on the education coefficient then reflects how much difference education makes for income within industrial categories. A second strategy would be to construct some sort of industry metric roughly analogous to occupational status as a metric of occupational position. The simplest such metric would be to scale industry according to the mean income of employers in that industry. In the regression equation where only industry and income appear, this is equivalent to the first procedure of using dummy variables. In regression equations where other variables besides industry appear, this industry metric has a different logic, since the internal structure of the scale cannot change as other variables are added. (In the case of the industry dummy variables, the coefficients of each dummy can change as other controls are added; in the case of a single industry scale, only the coefficient of the entire scale can change.) If we interpret this single industry scale as a very rough measure of the noncompetitiveness, arising from restricted access, of the markets in which some small employers

TABLE 6.9
Industrial Categories and Income Values Used in Industry Scale

Industry	Employers' Mean Income	N
1. Medical, health	$78,935	12
2. Education	76,000	1
3. Wholesale trade	44,116	8
4. Manufacturing, durable	32,632	13
5. Professional services	29,715	28
6. Finance, Insurance and Real Estate	29,549	12
7. Government	28,800	2
8. Mining	25,739	0[a]
9. Manufacturing, nondurables	23,255	4
10. Construction	21,913	56
11. Retail trade	21,525	43
12. Printing	19,741	3
13. Transportation	19,470	8
14. Repair services	16,874	15
15. Agriculture	16,510	34
16. Personal services, amusement	15,565	8
17. Communications	15,100	1
18. Business services	14,380	3
19. Utilities	10,766	2

Source: Data from Panel Study of Income Dynamics.
[a]Mean income for all employers assigned.

ployers operate, then the education slope in equations containing the industry scale can be interpreted as the returns to education net of the market situation of the small employer. We will control for industry using both approaches.

Industrial sector was measured using 19 industrial categories. There was at least one employer in all but one of these, and three or more in 14. So that this scale could be used for the other class categories, the mean income for all employers was assigned to the one industrial category where no employers were present in the sample (mining). The list of industrial sectors with mean employer incomes is presented in Table 6.9. There are a number of categories in this scale where the values are undoubtedly unrealistic (such as the $76,000 income for employers in the educational sector), but it is the best approximation from the present data.

TABLE 6.10
Education Coefficients Among Employers and Other Classes

Class	Education Coefficients in				
	Eq 1	Eq 4[a]	Eq 5[a]	Eq 4[b]	Eq 5[b]
All employers (N=254)	$3,843	$1,354	$847	$1,881	$1,429
(se)	(699)	(636)	(668)	(778)	(771)
R²	.11	.38	.39	.38	.41
Very small employers					
(1-9 employees; N=190)	4,042	799	261	1,154	801
(se)	(834)	(702)	(709)	(798)	(784)
R²	.12	.49	.50	.51	.54
Managers (N=479)	2,082	2,192	1,197	2,215	1,246
(se)	(222)	(241)	(271)	(252)	(271)
R²	.16	.16	.24	.22	.31
Workers (N=1,715)	851	903	240	999	320
(se)	(77)	(83)	(99)	(87)	(97)
R²	.07	.08	.15	.17	.25
Petty bourgeoisie (N=120)	1,781	1,534	1,057	1,402	1,123
(se)	(437)	(464)	(484)	(553)	(557)
R²	.12	.14	.20	.28	.32

Source: Data from Panel Study of Income Dynamics.
(se) = Standard error
Independent variables: Eq 1 = education only
                            Eq 4 = education and industry
                            Eq 5 = education, industry, and occupational status
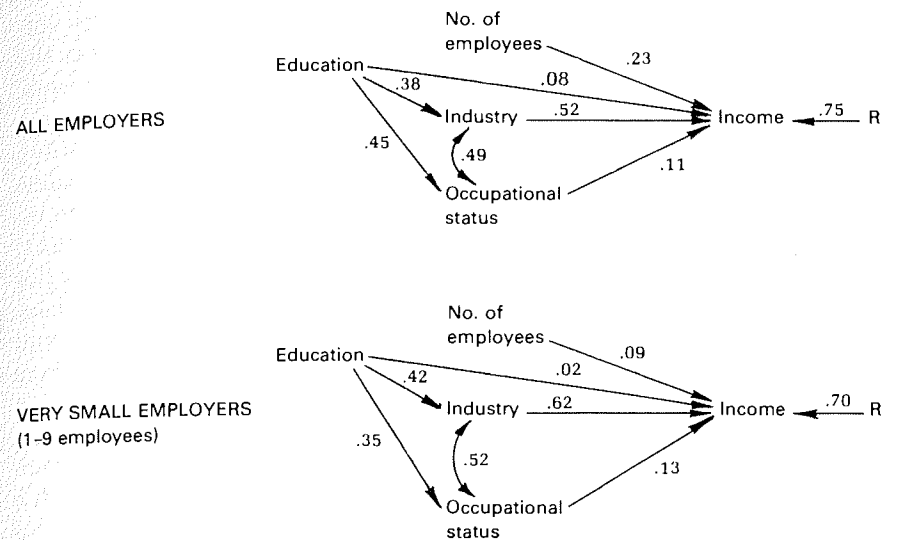[a]Using industry scale.
[b]Using industry dummy variable.

Figure 6.5. Path diagrams for relationship of education, industrial sector, and occupational status to annual income among employers. (Source: *Data from Panel Study of Income Dynamics.*)

We will use this industry scale and the industry dummy variables (construction being the left-out category) in two regression equations:

$$\text{Income} = a_1 + b_1 \text{ Education} + b_2 \text{ Industry (or } \sum_{i=3}^{20} b_i \text{ Industry}_i) \quad (4)$$

$$\text{Income} = a_1 + b_1 \text{ Education} + b_2 \text{ Industry (or } \sum_{i=3}^{20} b_i \text{ Industry}_i) \quad (5)$$
$$+ b_3 \text{ Occupational Status.}$$

The slopes on the education variable will then be compared to the coefficient in equation (1) (i.e., the simple regression of income on education) in order to assess the effects of controlling for industry and status.

These equations will be estimated separately for employers who employ fewer than ten workers as well as for all employers. Since the argument behind hypothesis 7.3 was based on an analysis of the class position of small employers, the results should be especially strong for these smallest of small employers. For comparative purposes, we will also estimate these two equations for workers, managers, and petty bourgeois. The results are presented in Table 6.10.

Whether we use the industry scale or the 18 industry dummy variables, controlling for industry in equation (4) drastically reduces the returns to education among employers. Among very small employers, the industry scale reduces the returns to education from over $4000 in the simple regression of income on education to $800 in equation (4). This is less than the returns to education for workers in this same equation. When occupational status is added to this equation, the returns to education among very small employers dwindle to only $261, compared to $240 for workers and nearly $1200 for managers. A similar pattern, although slightly less marked, occurs when the industry dummy variables are used. In both cases, controlling for industrial sector has essentially no effect on the returns to education for workers and managers, but reduces the small employers' returns to education by 50–80%.

Another way of illustrating the interrelationships between industrial sector, status, and education among small employers is through a minipath diagram. Let us assume that among employers, education is a cause of the individual employer's occupational status and industrial sector. Income in turn is caused by all three of these variables, as well as by other factors such as number of employees. Industrial sector and occupational status are correlated, but without a specific causal direction being assumed. The path diagrams for all employers and for very small employers which correspond to these assumptions are presented in Figure 6.5. This very simple model explains about half of the variance in income among both all small employers and very small employers. The direct education path in both path diagrams is quite small, while the industry path is very large.

Hypothesis 7.4. *The returns to education for small employers with less than a college degree should be relatively small, while the returns for getting college and graduate degrees should be very large.*

As in hypothesis 7.3, this hypothesis flows directly from the logic behind hypothesis 7.2. Education matters for employers not because of any incremental increase in human capital due to the content of training as such, but because credentials make it possible for employers to operate in sheltered, noncompetitive markets. This would imply that employers with less than a college degree would have very small returns to education, and Table 6.11 and Figure 6.6 indicate that this is indeed the case. Two thirds of all employers have less than a college degree. Among these employers, the returns to education are only $600; among all employers the returns are over $3800. The mean income of employers with less than a college education is just under
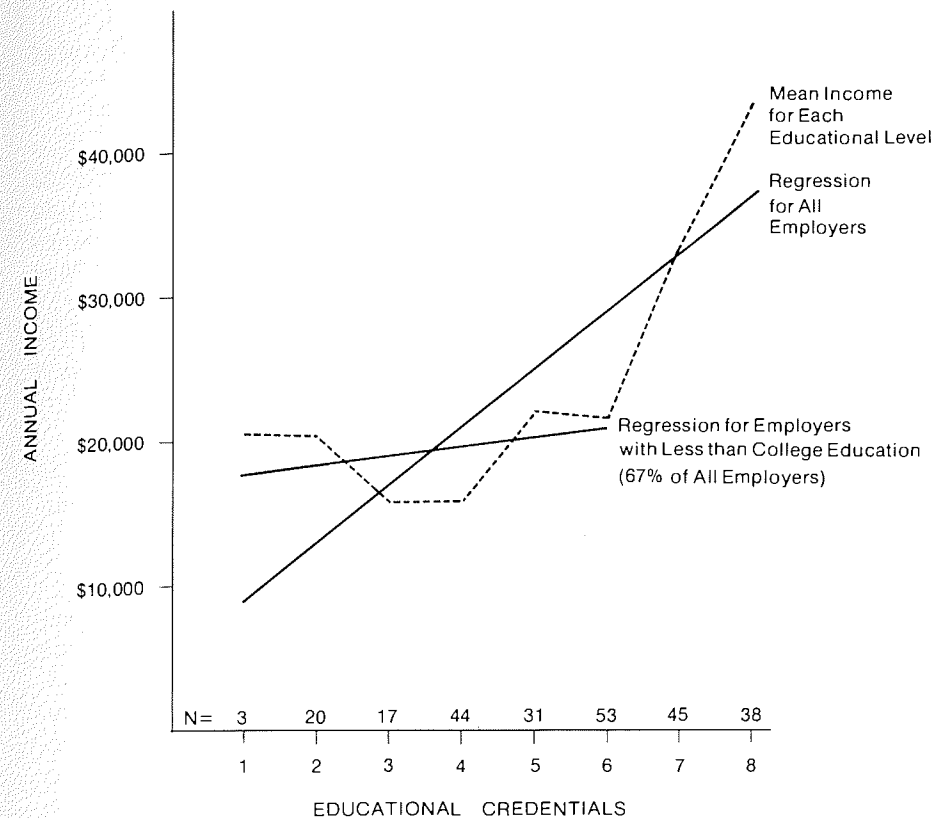
Figure 6.6. Income and education for small employers with less than a college education. Note: Educational credentials are defined as follows: 0 = no education; 1 = some elementary; 2 = elementary; 3 = some high school; 4 = high school; 5 = high school + nonacademic; 6 = some college; 7 = college; 8 = graduate training. (*Source: Data from Panel Study of Income Dynamics. Figure courtesy of the UW Cartographic Laboratory.*)

$20,000. The mean income for small employers who are college graduates is over $33,000, and for small employers with graduate training, it is $43,000. As Table 6.11 indicates, these basic results hold up even when the various controls in equations (2) and (3) are added.

CONCLUSION

The most general conclusion from the diverse results discussed in this chapter is that class consistently and significantly mediates the

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TABLE 6.11
Returns to Education for Employers with Less Than College Education

Employer Category	Returns to Education in		
	Eq 1	Eq 2	Eq 3
All employers (N=254)	$3,843	$2,136	$2,137
(se)	(699)	(817)	(820)
R^2	.11	.26	.26
Employers with less than college education (N=170)	602	768	771
(se)	(743)	(870)	(875)
R^2	.004	.16	.16

Source: Data from Panel Study of Income Dynamics.
(se) = Standard error
Independent variables: Eq 1 = education only
   Eq 2 = education, age, seniority, background, and occupational status
   Eq 3 = Eq 2 + annual hours worked

income determination process. People occupying different class positions but with the same level of education and occupational status, the same age and seniority on the job, the same general social background, and working the same number of hours per year, will still differ substantially in their expected incomes. And people in different class positions can expect to receive different amounts of additional income per increment in educational credentials, even if they do not differ on a variety of other characteristics.

With the exception of the analysis of the petty bourgeoisie (hypothesis 6.0) and the prediction of high income returns to graduate training for managers, the results in this chapter generally support the specific hypotheses about class and income developed in chapter 4:

2.0   Managers and supervisors do have higher incomes than workers, even controlling for a range of individual characteristics.

4.1 Managers have much greater returns to education than workers.

4.2 The difference in returns to education between managers and workers is especially great for college education levels (although not for graduate training, as expected).

7.1 The incomes of small employers are higher than those of workers or managers, controlling for various factors.

7.2 Small employers have especially high returns to education.

7.3 The high returns to education among small employers are substantially reduced when industry and occupation are controlled for.

7.4 The returns to education for small employers are very small below the college level.

These various interaction patterns reflect the centrality of class relations in the structure of inequality of capitalist societies. As has been stressed throughout, this does not mean that class and class alone explains everything. But it does mean that class plays a fundamental role in mediating the income determination process. Class relations as such may not be the direct "cause" of all income inequalities, but they structure the ways in which other causes operate. The interaction patterns we have explored in this chapter can be viewed as one consequence of such structural causation.