INDIVIDUAL PAY DIFFERENTIALS IN GREECE

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ABSTRACT

The present paper analyses the pay differentials among Greek employees in 1964 by making use of a random sample made up of 1076 males employed in commerce and industry in the Athens area. The theoretical background is the standard supply of and demand for labour framowork. This leads to an expanded earnings function incorporating personal characteristics (human capital) and job (firm) characteristics. The well known Mincerian type earnings function is modified in a way which allows estimation of the rates of return to firm specific and general training and inclusion of additional variables as well. Estimates of the relationship between earnings and the explanatory variables show that both supply and demand forces do matter in pay determination.

I. INTRODUCTION

Determination of the causes of earnings differentials between individual employees is of great importance as regards the effects of incomes policy, the

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personal distribution of income and the efficient allocation of resources. The standard human capital model, as developed by Mincer (1974), offers a comprehensive, although not ideal, basis for determining these causes. This paper is an empirical study of individual pay differentials in Greece within the human capital framework. It concentrates on the following issues. First, on the specification of the experience variable and the estimation of the returns to specific and general training. Second, on the role of additional (non human capital) variables in pay determination and third on the empirical testing of the overtaking concept. Our results suggest that returns to firm specific training differ from returns to general training ; firm size and expansion do matter in the determination of pay, while findings on the concept of overtaking are not entirely in line with those of Mincer.

Section II of the paper briefly discusses the analytical framework and develops our basic earnings equation. In section III, the data and the empirical specification of the variables are presented. The results of the analysis are discussed in section IV, while section V presents a summary of the findings.

II. THE THEORETICAL MODEL

The human capital earnings function as developed by Mincer (1974), which has been widely used in the relevant literature, is as follows

$$\ln W = bo + b_1 S + b_2 T - b_3 T^2 + e \qquad (1)$$

where ln W = logarithm of wages ; S = years of schooling ; T = Age - S - 6 and e = stochatic term. This equation is not the ideal one, and needs refinement regarding the specification of the experience variable, and expansion to include additional (demand side) variables.

The variable Age - S - 6 displays two drawbacks. First it does not provide the exact years of experience for persons with long unemployment or intermittent labour force participation. Second it assumes that postschool training exerts the same impact upon pay regardless the firm in which a worker is employed. In this paper we incorporate experience within the current firm or seniority and total potential experience as well. Such specification of on the job training enables us to estimate the rate of return to general and firm specific training. Suppres-

sing the quadratic terms and schooling for expository purposes equation (1) is written as

$$\begin{aligned} 1n\ W &= bo+b_1Pexp+baSen+e \\ &= bo+b_1(Pexp+Sen)+(b_2 - b_1)\ Sen+e \\ &= bo+b_1T+(b_2-b_1)\ Sen+e \end{aligned} \qquad (2)$$

where Sen = years of experience within the current firm and Pexp = Age —S — 6-Sen. Only if total postschool experience were homogeneous (b_2-b_1) would be zero and earnings function (1) appropriate. However it has been shown that employers appreciate the length of experience within their firms more than other experience (Chapman and Tan 1980). The coefficient on seniority in equation (2) reflects the returns to firm specific training, given the general experience, and the coefficient on labour market experience reflects the returns to general training, given the length of firm-specific training.

This interpretation of these coefficients becomes apparent if we consider the nature and financing of general and specific training (Becker 1964, pp. 11-28). General training provides skills that are useful to all firms and is measured as the value of worker's marginal product. Such training is paid for by the worker, since the probability of quitting discourages firms from financing it. Specific human capital (SHC) enhances worker's productivity only in the firm of employment and can be separated into firm - financed (SHC_f) and worker - financed (SHC_W) human capital. SHCf represents the difference between the worker's marginal product and his wage ; while SHC_W represents the difference between current wage and the maximum wage (net of transfer costs) which he could obtain elsewhere. This maximum wage depends on his general training. These definitions make clear that the coefficient on seniority, which indicates the extra benefit a worker gets from staying with a given firm instead of changing employer, is equivalent to returns to SHC_W.

Over and above schooling and training additional factors do matter in earnings determination (Layard 1976, p. 214). Two of these factors are the expansion and the size of the firm in which each respondent is currently employed. Demand-side considerations suggest that employment changes have a positive effect on wages. The main argument it that if supply of labour, in the short run, is not perfectly elastic at the firm level and employment increases as a result of an expansion in the demand for labour, wages are expected to increase as well.

The importance of firm size as a determinant of pay has been shown repeatedly in empirical studies of interindustry analyses of earnings (Masters 1969, Sawer 1973, Hood and Rees 1974). Yet its theoretical justification is not clear. Firm size captures a host of factors which result in a positive relation between it and earnings. Most important of these factors appear to be the disutility associated with working conditions in a large firm/plant because of the greater division of labour and the longer manufacturing runs, monopoly or market power, extent of unionisation and so on.

By introducing these new factors into our earning function we arrive at the following equation, which is our basic earnings model.

$$\text{In } W = b_0+b_1S+b_2T+b_3Sen - b_4T^2 - b_5Sen^2+b_eFs+b_7Fs+e \qquad (3)$$

where Eg = employment growth and Fs = firm size.

Before going on, it seems appropriate to mention the meaning of the overtaking period, which in Mincer's analysis plays a central role. The concept of human capital is the idea that people spend on themselves in different ways (schooling, on the job training) not just for current enjoyment but for anticipated future returns. This implies that individual workers forgo current earnings or accept starting pay lower than they could, to acquire skills which will raise their future income. Furthermore, in normal cases, human investments are undertaken at young ages, and after a point at a declining rate. Thus, at the early stages of working life, observed earnings are smaller than potential, since human capital formation takes place. Consequently, the gap between potential or gross earnings, and actual or net earnings is eliminated as experience expands, and at the time where net investment is zero both, actual and potential but unobserved earnings, are equal. This is the so called overtaking or crossover period of experience. The overtaking period provides a base for testing the contribution of schooling in explaining earnings inequality, since at this stage postschooling investment and its returns have been offset. Moreover, by comparing the residuals variance at the overtaking to the variance of the dependent variable in the whole sample, we estimate the potential explanatory power of the human capital model (see Section IV).

III. EMPIRICAL SPECIFICATION OF THE VARIABLES

In this section we describe our data sources and present the empirical counterparts of the variables used. We utilise individual data referring to October 1964. These data are the outcome of a research project by Professor Harvey Leibenstein, while he was a visiting research fellow of the Centre of Planning and Economic Research (KEPE). He designed and directed a sample survey to obtain information that would be useful in the planning of the Greek educational system. In fact, he used the collected data to estimate rates of return to education (Leibenstein 1967). The survey was carried out in the Greater Athens area, and was a random sample survey which used as a sampling frame all Greek corporations, limited liability companies and many personal firms. It was a firms survey, in the sense that the information required was provided by the heads of personnel, and dealt only with those who were employed at that time. The questionnaire included information on the earnings and personal characteristics of each employee. The KEPE kindly put these questionnaires at our disposal in their raw form. The variables used, as derived from Leibenstein's survey, are defined as follows:

E a r n i n g s (W.). A measure of the transaction of a well defined quantity of labour is needed as a dependent variable. Hourly pay seems to be such a measure. In this study, however, monthly earnings (drachmes per month) is the dependent variable, since no hourly earnings were available. Earnings here are before tax, social security contributions and other deductions. They also include the impact of overtime, and thus some of the variation of individual earnings may arise from variation in the extent of overtime working. Unfortunately, figures of hours worked across firms are not available, so the amount of overtime cannot be estimated.

S c h o o l i n g (S). In empirical studies education is usually measured by time spent in educational institutions. This of course ignores quality differences among types of education, types of schools, degrees obtained and intertemporal changes in the quality of education. To moderate these difficulties in measuring the «output» of schooling, we explore all relevant information recorded in our survey. Years of schooling completed are available. Furthermore, a distinction is made between years of general and years of technical education. Technical education is less homogeneous that general education. It mainly offers vocational and tehnical education at the secondary level. The minimum length of education required to enter a technical school was not uniform. Some required only primary school, some three years of high school (Gymnasium) and some a secondary

education degree (Lycium). Moreover, until 1976, the secondaty - level vocational courses were a dead end, in that those who successfully completed the courses were not able to continue their education at the university level.

Given this structure of the Greek educational system, in the following analysis of individual pay by type of education, we group together those with a technical education, who had only finished primary school. This group includes those who attended lower technical education. Out of the 81 who had some kind of technical education, 72 had only a primary general education and thus belong to this group. The rest of them, 9 employees, were grouped together with those with «some university», ie 13-14 years of general education, in the belief that these two types of education are less different to each other.

We also know whether the employee speaks a foreign language. This can be considered as a productive trait, and is expected to have a positive effect on earnings.

Experience (T). The experience variable here is that of potential experience, since actual experience is not available, defined as age minus schooling mines 6 years of preschooling span. Age can be used instead of experience. Yet experience is more in accord with human capital theory, since it allows us to measure returns to education holding the other kinds of human capital constant.

Seniority (Sen). This variable is expressed in years (and months) of employment within a given firm, and is readily available in the questionnaires. As was discussed previously, seniority or tenure is considered as a specific training proxy.

Firm size (Fs). Is compiled from employment data and represents the number of employees of each firm. Out of 31 firms surveyed, only one had more than one establishment. Thus firm size here is almost identical to plant size, which is more relevant in individual pay determination than the former.

Employment growth (Eg). This is calculated as the ratio of total personnel of 1964 to that in 1960 times 100, of each firm. A priori considerations do not suggest the exact functional form of this variable, so alternative forms were tested.

IV. THE RESULTS

Table 1 presents the results of the estimated earnings function for our sample- The general impression of this table is that personal characteristics such as years of education, labour market experience and seniority within the firm do matter in explaining earnings differentials.

In equation (1.1) only total years of education are included. In equation (1.2) experience and its square are added. Here, compared to (1.1), a comparable improvement in earnings explanation is shown. R^2 more than doubles and the standard error of estimation is lower. The coefficient on education is higher, and now for each extra year of education the rate of return is, on the average, almost 8 percent. In equation (1.3) job tenure instead of total experience is included. Its «fit» is not as good as in the case of experience, since seniority within the firm clearly underestimates the total postschool invesrtment in human capital. Furthermore the coefficient on education turns out remarkably lower than in other regressions- Regressions (1.2) and (1.3) indicate a difference in the role of seniority and potential labour market experience in explaining earnings, since the coefficient on seniority is higher than on experience.

Consequently, and also to obtain estimates of the returns to different types of acquired training, potential experience and seniority (and their squared values) are included in equation (1.5). Here an improvement is shown in earnings explanation, and the coefficient of seniority is about 25 percent higher than that of the potential experience. The statistical significance of the potential experience and seniority variables indicates that both general experience and worker-financed specific traininng are important as pay determinants. Furthermore, the consistently greater value of the seniority coefficient shows that firms appreciate experience on the current job more than outside work experience.

The form of our earnings function assumes that the returns to on - the - job-training (experience) are the same regardless of the level of education. Thus the log earnings - experience profiles for people with various levels of schooling differ only in their height. In such circumstances, and if the rate of return to schooling is constant, we can identify the partial correlation coefficient on schooling as its rate of return. To test the independence of experience and schooling, we include an interaction term between these variables in equation (1.4). The coefficient turns out insignificant, negative and very small (-.00025). (In Mincer's study it is-.0045, and in Psacharopoulos and Layard-,0018). This implies that the minimal interaction present will not erode the main results. The remarkable stability of the education coefficient seems to confirm that, on the average, the pri-

TABLE 1

Rergession of 1n Monthly Earnings

Variable	1.1	1.2	1.3	1.4	1.5	1.6	1.7
constant	7.3697	6.5723	7.0901	6.5463	6.6404	6.3709	6.1006
	(.0367)	(.0419)	(.0334)	(.0660)	(.0409)	(.0624)	(.1185)
S	.0628	.0781	.0560	.0834	.0684	.0658	.0645
	(.0036)	(.0030)	(.0030)	(.0057)	(0029)	(.0029)	(.0029)
T		.0452		.0481	.0339	.0338	.0332
		(.0028)		(.0039)	(.0027)	(.0027)	(.0027)
T^2		−.0005		−.0005	−.0004	−.0004	−.0004
		(.00006)		(.00006)	(.00006)	(.00005)	(.00005)
ST				−.00025			
				(.00023)			
Sen			.0625		.0417	.0383	.0406
			(.0039)		(.0037)	(.0037)	(.0038)
Sen^2			−.0011		−.0007	−.0006	−.0007
			(.001)		(.0001)	(.0001)	(.001)
Es (1n)						.0677	.0677
						(.0120)	(.0119)
Eg(1n)							.0566
							(.0211)
R^2	.219	.492	.470	.492	.575	.587	.590
SEE	.470	.379	.388	.379)	.348	.342	.341
F	310.3	346.1	317.3	259.2	289.2	253.3	219.4

Source : Based on Leibenstein's Survey, KEPE 1965, Athens.

Notes : Sample size = 1076

Numbers in parenthesis are standard errors. The coefficient is significant at 5 % (1 %) if $bi/SE_I > 1.96$ (2.23).

SEE = The standard error of estimation of the regression equation.

vate rate or return to an additional year's schooling is about 7-8 percent. This figure is almost the same as in many similar studies in other countries.

In equation (1.6) the role of firm size, measured as the log of the number of employees of each firm, is also considered. Since both the dependent and the firm size variables are in their log form, the coefficient on firm size is the elasticity of pay with respect to firm size. Its sign is positive and its magnitude means that on the average firms with twice the mean size, ceteris paribus, have monthly earnings 7 percent higher than the average.

Finally, in regression (1.7) the variable firm expansion, measured as the log of the ratio of employment in 1964 to employment in 1960, is included. As in the case of firm size, the coefficient on employment growth is the elasticity of pay with respect to employment growth. Its size means that firms expanding their employment by 100 percent pay about 6 percent more, other things being equal·

We see that using these variables, almost 57 percent of individual pay variation is explained, which clearly is a considerably large part of the whole earnings variation. Regression (1.7) will constitute the basis for further analysis, since it is suggested by the theoretical considerations of section II, and incidentally its explanatory power is relatively high.

It is interesting to analyse the impact of schooling on earnings by different levels of schooling. This enables us to see more clearly the pattern of increamental returns from one level of schooling to the next. Moreover it is interesting to see if returns to education are almost similar to all levels of schooling, since there is overwhelming evidence (for a survey see Psacharopoulos 1973, ch. 3) that they usually decline along the length of schooling. To obtain estimates of the rate of return to successive years of schooling we repeat equation (1.7), but instead of schooling being a continuous variable, dummy variables for successive three-year of schooling are used. The sample size does not allow a finer analysis, ie for each year of schooling. Table 2 gives the coefficients on such dummy variables.

The dummy variable of the first schooling group with 6 or less years of schooling, corresponding to those with, at most, primary education, takes value zero and is the point of reference. An interesting feature of the incremental (margiginal) returns to successive schooling groups is that they do not decline as has been observed also where. Another feature is that rates of return to education are higher for those with completed educational courses, ie 10 - 12 and 15+, that for those with some secondary education (group 7-9) or some university education (13 - 14), dropouts).

It seems that the returns to higher education are not lower than the returns to investment in secondary education. Taking into account the number of years of each group, we see that annual returns to higher education are slightly higher than those to secondary education, (for similar results for the case of Greece see Loibenstein 1967 p. 13, Bowles 1969 ch. 5, and for different conclusions Athanassiou 1978). This finding is not entirely in line with what has frequently been observed in many studies carried out in other countries, where rates of return are usually, but not always, higher at lower levels of schooling. The following are possible explanations of the observed pattern of incremental returns from successive years of schooling:

A higher degree qualification is required for many well paid jobs. Accountants, mechanical engineers, chemical engineers are some well paid jobs for which a higher qualification is a prerequisite. Furthermore, the Greek economy has displayed a rapid economic growth. Given that there is a complementarity between capital accumulation and the demand for highly qualified manpower, it seems reasonable to expect that the rapid rates of capital accumulation in Greece in the 1950s and 1960s have led to such demands for university graduates, that returns to higher levels of education turn out to be slightly higher. This shortage of graduates was compounded by the lack of expansion of university places till the early 1960s. The number of university graduates from 5,008 in 1957 rose only to 6,350 in 1966.

The relatively high private returns to higher education in Greece indicated here, are consistent with the fact that a lot of Greek students go abroad for higher education, even though it costs them more than studies in their own country. Such students usually prefer studies which promise high earnings. Finally, the success of the «Frontisteria» (private cram - schools), which prepare students to take university entrance examinations, is a probable indication that a university education is a good investment.

The estimated returns to secondary education in Greece are rather low, and this can be attributed to the following factors : General secondary education does not offer specific knowledge, secondary school graduates do not wish to become blue collar workers and they search for jobs with high social prestige rather that pay. The early expansion of secondary education, probably at the expense of its quality, has increased the supply of employees with a secondary education degree, and in many cases it is difficult for them to find a job «suitable» to their qualifications and aspirations. One could argue that secondary education has also been seen as an investment in an effort to achieve university admission, which has an attractive economic benefit.

TABLE 2

Years of Schooling and Earnings*

Years of Schooling	regression coefficient	standard error	school group increment	n
6 or less	—	—		428
7 – 9	.0862	(.0344)	.0862	134
10 – 12	.3100	(.0266)	.2238	317
13 – 14	.4446	(.0525)	.1346	50
15 +	.8233	(.0353)	.3787	147
R^2	.594			
SEE	.341			
F	155.6			

* Reported estimates are derived from an earnings function like (1.7).
Coefficients on the rest variables are of the same sign and significance as in (1.7).
See notes of table 1.

Finally, one should always bear in mind that the analysis here pertains to employees and excludes independent professionals and the self-employed, where secondary education seems to have higher returns than those indicated in this study (Athanassiou 1978 p. 32).

Another way to run equation (1.7) is to use dummy variables for different types of educational courses, instead of successive years of education. Data here allow us to distinguish between lower technical education and its alternative, general secondary education. We also know whether each worker was a foreign language speaker. This characteristic is considered as a productive trait and we use a dummy variable for such workers. This dummy variable pertains to those with a completed secondary education and the advantage of knowledge of a foreign language. This treatment is suggested by the fact that such a group includes the majority of foreign language speakers. Moreover it is rather difficult to disentangle the effects on earnings of knowledge of a foreign language from those of, for instance, a higher education. Here the specific hypothesis tested is

whether or not knowledge of a foreign language increases, ceteris paribus, the earnings of secondary school graduates.

The analysis is otherwise similar to that carried out in the case of successive schooling groups, and the estimates are given in table 3. The findings here are generally in accordance to those already obtained, though the coefficient on technical education is not statistically significant. Furthermore, this coefficient is smal 1er than that relating to the group with three years of general secondary education. This seems to be due to the fact that during the 1960s (and previously) technical schools had not long been established, and their quality was doubtful. Another explanation is that in our sample, many of the workers with technical education were employed while at the same time attending technical schools. Moreover, almost half of those with a technical education were employed as juveniles.

TABLE 3.

Types of Schooling and Earnings

years or type of schooling	regression coefficient	standard error	school group increment	n
6 or less	—	—		428
Technical education	.0675	(.0419)	.0675	72
7 – 9 general education	.0904	(.0443)	.0904	62
10 – 12 general education	.2891	(.0276)	.1887	275
12 general education + foreign language speakers	.4074	(.1321)	.1183	42
13 – 14 general education	.4145	(.0529)	.0071	50
15 + general education	.8007	(.0360)	.3862	147
R^2	.584			
SEE	.345			
F	124.2			

Notes as in tables 1 and 2.

Another interesting finding here is that secondary school graduates who are foreign language speakers earn on the average about 40 percent more than otherwise (.407- .289). This seems plausible since knowledge of a foreign language is a qualification respected by Greek commercial and manufacturing industries, which have many transactions with foreigners. Furthermore, foreign language speakers seem to be people with more drive, since the acquisition of this qualification is not a direct result of the formal educational system, but the outcome of an additional, optional, educational effort.

Finally, since the group of employees with at least 15 years of schooling includes some who are foreign language speakers, this may boost their rate of return to «education». Standardisation for this factor should lead to a clear equalisation of the rates of return to various levels of education. The size of our sample does not permit a more detailed analysis, and consideration of all foreign language speakers as one group «destroys» reported estimates because of its heterogeneity.

We turn now to the overtaking year of experience proposed by Mincer (1974), and we employ his estimation procedure to shed more light on the role of education as a determinant of pay. The idea is that the best period to estimate the explanatory power of schooling is where earnings are uncontaminated by investment in training or the returns to past training (overtaking period), ie when other factors, and specially experience, are held constant. This calls running regressions of the earnings on schooling (the schooling model) within different experience groups. According to these considerations, as we approach the overtaking year of experience, where actual and potential earnings are equal, «goodness of fit» of the schooling model should be higher than elsewhere.

Regressions of monthly earnings on schooling for our data are given for successive experience groups in table 4. The coefficient of determination of these regressions are higher at the early age groups than in the case of the overall regression. However they do not follow an inverse U shape as one would expect. The highest value of R^2 is obtained at the second experience group, and then it declines only to rise again at the level of 11 - 14 years of experience ; beyond this group it fluctuates at declining levels. For the early years of experience groups, as one might expect, the coefficient on education is higher than that obtained for the whole sample.

Our results give some support to the concept of overtaking. The 4 - 7 years of experience can be considered as approaching the overtaking period. Here the rate of returns to education is 8.7 percent while $R^2 = .726$. The 4-7 years of experience is a shorter period than the 8 years found by Mincer (1974 tables 3.3 and

3.4) for the case of United States, and 12- 17 years of experience estimated by Psacharopoulos and Layard (1979 table VI) for Britain.

TABLE 4.

Regression of Monthly Earnings on Schooling: witnin Experience Groups*

T	a_1	standard error	R^2	σ(u)	σ(S)	σ(1n)	n
0 – 3	.1390	(.0115)	.688	.268	2.84	.4762	68
4 – 7	.0872	(.0055)	.726	.223	4.14	.4239	98
8 – 10	.0870	(.0099)	.466	.309	3.31	.4213	89
11 – 14	.0851	(.0080)	.490	.343	3.94	.4791	118
15 – 20	.0857	(.0066)	.492	.346	3.96	.4839	179
21 – 25	.0738	(.0086)	.365	.356	3.64	.4456	133
25 – 30	.0636	(.0096)	.296	.366	3.71	.4341	121
31 – 35	.0629	(.0119)	.248	.411	3.73	.4710	88
36 – 40	.0900	(.0115)	.411	.416	3.84	.5397	89
41 +	.0601	(.0114)	.232	.421	3.83	.4779	93

* The regression run is $\ln Y = a_0 + a_1 S + u$
Notes as in table 1.

We see that at the overtaking period, years of schooling alone explain almost 3/4 of the earnings differentials. Furthermore, applying Mincer's formula we estimate the potential explanatory power of human capital model. We do this by comparing the residuals variance at the overtaking to the variance of the dependent variable in the whole sample. That is

58 % $\left(= 1 - \frac{\text{var(u) at j}}{\text{var ln Y}} = 1 - \frac{.223}{.532}\right)$ of earnings dispersion can be attributed

to the variation in human capital (schooling and experience). The argument is that estimated human capital earnings functions do not account for the unobserved variation in postschool investment (ie in the investment - potential earnings ratio, the investment horizon and the returns to on-the-job training). At the overtaking year, however, such a variation has been eliminated so the residual variance at this point serves as an estimate of the residual variance in the unobservable human capital earnings function.

V. SUMMARY AND CONCLUSIONS

In this paper we analysed the pay differentials of Greek male employees using cross-section individual data. The theoretical underpinning of pay determination employed is an implicit supply and demand for labour framework.

The first of the empirical findings here relates to the specification of the labour market variable. If instead of including only the estimated work experience (Age - Schooling - 6), we incorporate the actual years of seniority as well, the statistical results are enhanced. Moreover, the impact of work experience is not uniform. Current job tenure exerts a separate and stronger effect upon employment earnings than potential labour market experience.

The results of firm size, measured by total personnel, show that employment in large firms has a significant pay advantage compared to working in small firms. While the firm size variable captures a host of factors associated with pay, we cannot interpret our finding as reflecting exclusively compensatory pay differentials. Apart from the differences in working conditions, the positive relationship found perhaps stems from differences in the firm's market power, its ability to pay, and the possible unrecognised trade union effects. This implies a resource misallocation in the production process, which is greater than that usually measured by the deviation of price from marginal cost.

Another interesting finding here relates to the impact of firm's growth, measured in terms of employment growth, upon the individual earnings structure. A firm doubling its personnel pays, ceteris paribus, about 6 percent higher than otherwise. This is an indication that in the short run, firms use wages as a means to attract additional labour. This is consistent with the competitive hypothesis.

The analysis shows that the effect of education on pay is significant and substantial. Moreover, even when other variables are held constant, education does

raise earnings by almost the same rate. The stable impact of schooling on pay means that private returns to an extra year of formal education are, on the average, about 7-8 percent. Regarding the impact of different levels of schooling on pay, we found that returns to higher education are slightly greater than those to secondary education. This pattern of returns to schooling level seems to be consistent with the frequently documented surplus of secondary school-leavers in the labour market and the shortage of the higher level manpower. In other words, the Greek labour market must have been rather competitive during the early 1960s, so that excess supply was reflected by a lowering of relative pay and excess demand by a raising of relative pay.

One qualifation of this study is that no «ability» variable was taken into account. It seems, however, that this omission is not serious enough to negate the validity of the results obtained. Our data pertain to those employed in commerce and industry and exclude those in private professional practice. It seems reasonable to suppose that these two groups differ from each other in terms of ability, risk aversion and drive : people with greater ability and energy tend to go into private practice, while others with similar education become, ceteris paribus, employees. Thus, we argue that our sample is rather homogeneous in terms of ability and the estimated coefficient of higher education is less likely to be upward biased because of the omission of ability.

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