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PAY STRUCTURE IN GREECE 1974-1994

by C. KANELLOPOULOS

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Costas Kanellopoulos Research Fellow Centre of Planning and Economic Research

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C. KANELLOPOULOS

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ABSTRACT

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This paper, using individual data from the four recent Family Expenditure Surveys of Greece, examines the evolution of the level and structure of wages in the period 1974-1994. It turns out that average real wages increased remarkably in the period 1974-1982, while they declined in the period 1982-1988, and remained rather stable in 1988-1994. A drastic wage compression as between sexes, educational and age groups took place in the first period examined, while it slightly reverted since then. While the increase of the educational level is not inconsistent with these changes, it seems that minimum wage and incomes policies have a rather significant role in explaining these changes.

1. INTRODUCTION

Greece is a country for which changes in the wage structure have not been analysed, neither are they well documented, while reliable individual data on wages by gender, occupation, industry, education and age are rather scant. The few existing studies on wages use either aggregate or industry data (Economou, 1983), while those based on individual data are cross section (Kanellopoulos, 1994), or based on local ad hoc sample surveys (Lambropoulos and Psacharopoulos, 1992; Kioulafas et al., 1992). Analysing the wage structure in Greece could be useful in many respects. The Greek economy has been stagnating since the late 1970s while macroeconomic imbalances, despite the various stabilization programmes, have been long prevailing. The poorer performance of Greek economy, compared to the European Union average in terms of GDP growth and inflation, has coincided with a drastic reduction of pay differentials and generally of income inequality. Scholars and international organizations have suggested that this pay compression perhaps has enhanced labour market inflexibilities and contributed to the poor achievement of the Greek economy, in the sense that the labour force is not motivated for acquiring required training and seeking posts of higher responsibility, while it is allocated inefficiently among skills, regions and industries (Metcalf, 1986; OECD, 1983; Xafa, 1990).

This paper uses rather comparable individual data from the four recent Family Expenditure Surveys (FES) to document changes in the wage structure between 1974 and 1994 and to analyse at a preliminary stage these changes. It turns out that pay differentials in Greece declined drastically between 1974 and 1982, while in the period 1982-1994 remained roughly stable, if they have not partly reversed. The paper considers the role of various sets of explanations for the observed pay compression, paying attention to the role of labour market forces and the government policy as exercised through the minimum wage and incomes policies.

Greece during the examined period witnessed important internal and external changes, which may have affected the wage differentials at the corresponding time. In 1974 parliamentary government came to power, after the collapse of the seven year military dictatorship. During the 1975-1981 period, under conservative governments, formal incomes policy was in operation, through the announcement of guidelines for nominal annual wage increases. In 1981 Greece joined the European Union and a socialist government came to power, whose growth strategy relied upon expansionary fiscal and incomes policies. In January 1982 minimum wage and salary rate were increased by about 40 percent, while graduated increases were implemented for low-paid employees. In 1982-1989 there were schemes of partial indexation of wages to the cost of living index every

four months, favouring the low-paid workers. The need to finance expansionary budget deficits led to a sharp increase in public debt and to a substantial increase in money supply and inflation. Fiscal and incomes expansionary policies did not elicit a considerable output growth. On the contrary, external current account deficits increased sharply and a stabilization programme, relying mainly on rapid reduction of wages through modifications of the indexation scheme, was implemented in 1986-1987. That programme was, however, abandoned in the 1988-1989 election years and the public debt increased even further. Since 1991 new stabilization and adjustment programmes have been adopted by the governments in power (conservative in 1990-1993 and the socialist since then). The indexation scheme was abolished in January 1991. Contractual wages have been determined through collective bargaining in the private sector, while in the public sector wages were set unilaterally by the government following restrictive incomes policy. Thus, diverse wage policies have been implemented during the examined period, which allow us to see their effects upon wage structure.

2. THE DATA

The data for this paper come from primary data of the four countrywide FES carried out by the National Statistical Service in 1974, in November 1981 - October 1982, November 1987 - October 1988 and November 1993 - October 1994 (hereafter 1974, 1982, 1988 and 1994 FES respectively). While the main purpose of these surveys was to collect information on household expenditure for the revision of the retail price index, they include rather detail information about the wages and socioeconomic features of the surveyed individuals. They reported their net earnings (home take pay) the last time they were paid as well as the period covered by this payment. Earnings were then calculated on a monthly basis (drachmas per month). Since the households of each survey were interviewed throughout a twelve-month period during which annual rate of inflation was around 15%, the earnings are deflated by the monthly consumer price index to the middle of each period. The questions used regarding pay are not however identical in the four used surveys. The 1974, 1988 and 1994 FES net earnings (home take pay) from all jobs are calculated including wages, salaries, tips, bonuses, Christmas and Easter allowances. In the 1982 FES however, while the concept of the pay variable is the same, it does not include Christmas and Easter allowances. As all employees get such allowances, which are equivalent to one sixth of the normal pay, the 1982 individual earnings were adjusted accordingly.

The analysis is confined to those employees who reported pay at least from their main job, whose age was between 16 and 65 and, where hours worked are available (i.e. 1994, 1988 and 1974), have worked at least 14 hours during the surveyed week, while for 1982 reported monthly pay was at least 40,000 Drs in 1994 prices. The analysed variable pertains to monthly home take pay (drachmas/month) and includes pay from the main and secondary job. To examine the inter temporal changes in real pay reported individual earnings were expressed in prices of 1994, using the retail price index.

3. AVERAGE PAY LEVELS

Table 1 reports the real average monthly earnings by education and age groups for males and females. The first feature of this table is that between 1974 and 1982 (i.e. during the latter half of 1970s) on the average real wages for men increased by 23.2 percent, while for women by 34.7%. However, during the period 1982-1988 (saying during the 1980s) there was a remarkable decline in real net pay, -15.8% for males and -6.3% for females. As a result of these declines the 1988 male earnings have been 3.7% higher than the corresponding 1974, while for female this advantage is 26.2%. Finally, during the period 1988-1994 there was essentially a stability in real earnings in the sense that males earnings increased by almost 1%, while female by 1.4%. It seems that for males average rewards, after their remarkable 1974-1982 rise, have returned close to the 1974 level, while for women near to the 1982 level.

Moreover, these changes were not spread equally among all workers. It turns out that for males during the first period the less educated and the young groups realized a remarkable increase in their pay, while the higher education male graduates at prime age (31-45) saw their wages decline. During the second period there was a decline in real pay of all groups, however for the less educated males (i.e. those with elementary education or less) it was not so high to exceed the previous increase, as was the case for those who have completed secondary education or university. It is impressive that, with the exception of young secondary education graduates, for educated male employees (tertiary and secondary graduates) real wages, a measure of economic opportunity, are lower in 1994 than for the same groups in 1974. The opposite has happened to matured (age 45+) elementary school leavers and those who have not completed elementary school.

For women the wage changes were rather different, in the sense that all groups of Table 1 gained a real increase during the first examined period (mature age university graduates relatively low). During the 1982-1988 period the greater wage losses were confined to higher education graduates and to matured secondary graduates, so their real

¹. Interestingly a rather similar pattern of real wages during the examined period turns out from the National Accounts. The annual real average wage increased by 3.51% for the period 1974-1982 and declined by 2.67 for the period 1982-1988. In manufacturing monthly pay in real terms of white collar male workers increased by 26.4 between 1974-1982 declined by 6.8% in the 1982-1988 period and increased by 5.8% during 1988-1994. The corresponding figures for female white collar were 40.9%, 3.8% and 7.8% (NSSG).

TABLE 1
Average real monthly pay by educational and age groups (Drs 1994)

| | T | 1974 | 1982 | 1988 | 1994 |
|------------------|----------|--------|--------|--------|--------|
| | | 1974 | 1982 | 1966 | 1994 |
| | | Males | | | |
| Higher education | All ages | 321694 | 313660 | 267083 | 270677 |
| | up to 30 | 210827 | 240689 | 207313 | 184500 |
| | 31-45 | 334603 | 318604 | 272267 | 264345 |
| | 46-65 | 365526 | 377351 | 299038 | 330100 |
| Secondary | All ages | 233160 | 271564 | 212253 | 218373 |
| | up to 30 | 165985 | 216728 | 162716 | 164673 |
| | 31-45 | 251798 | 304941 | 232969 | 236059 |
| | 46-65 | 286890 | 302656 | 277082 | 274050 |
| Primary | All ages | 180774 | 228750 | 189075 | 187124 |
| | up to 30 | 157089 | 207550 | 157896 | 146607 |
| | 31-45 | 206692 | 246143 | 203029 | 200826 |
| | 46-65 | 179845 | 225893 | 200744 | 201466 |
| No primary | All ages | 165913 | 201855 | 165634 | 173326 |
| | up to 30 | 156824 | | | 134869 |
| | 31 - 45 | 179811 | 201934 | 170409 | 202846 |
| | 46 - 65 | 152856 | 209178 | 168619 | 165789 |
| All males | | 202234 | 249250 | 209823 | 211637 |
| N | | 2780 | 2407 | 2314 | 2257 |

TABLE 1 (Continued)

| | | Females | ya kanan da kanan da | | |
|------------------|----------|---------|---|--------|--------|
| Higher education | All ages | 215763 | 230272 | 203484 | 203641 |
| - | up to 30 | 173357 | 193502 | 160314 | 152684 |
| - | 31 - 45 | 243191 | 249670 | 220739 | 207591 |
| | 46 - 65 | 327161 | 327767 | 249329 | 270376 |
| Secondary | All ages | 139616 | 170182 | 162239 | 165971 |
| | up to 30 | 124188 | 148287 | 142560 | 143761 |
| | 31 - 45 | 173712 | 206902 | 179652 | 183932 |
| | 46 - 65 | 223331 | 243872 | 209453 | 198395 |
| Primary | All ages | 105812 | 148528 | 133590 | 132940 |
| | up to 30 | 100172 | 139699 | 116530 | 133546 |
| | 31 - 45 | 111474 | 159190 | 139160 | 133372 |
| | 46 - 65 | 120721 | 150722 | 146436 | 131477 |
| No primary | All ages | 92361 | 138882 | 113986 | 126323 |
| | up to 30 | 83685 | _ | 1- | |
| | 31 - 45 | 95967 | 128642 | 136756 | 123338 |
| | 46 - 65 | 89480 | 143584 | 110976 | 126424 |
| All females | | 126242 | 170019 | 159309 | 161488 |
| N | | 999 | 1002 | 1177 | 1320 |

Source: Family Expenditure Surveys.

1988 wage was remarkably lower than their 1974 wage. On the other hand wages of prime age female workers, who have not completed elementary school continued to increase remarkably. A similar pattern appeared during the 1988-1994 period, where young and prime age educated females continue to lose in terms of real wages, while young less educated realized a remarkable pay increase. Comparing the 1994 female wages to those of 1974, it turns out the latter are lower, like the case of men, for all higher education female graduates and the mature secondary education employees.

Table 2 shows the average wage ratios of successive educational levels for men and women for the three age groups, as calculated from Table 1. It turns out that the wage premium of higher education graduates compared to secondary education graduates declined during the 1974-1982 period for both genders. However, a partial recovery of the higher education wage premium appears in 1988 for male workers, while for female workers its declining trend continues through time. A rather similar pattern is also observed regarding the wage ratios of secondary education graduates as compared to those with elementary education, even though here the signs of reversion appear in 1994. In most cases, the higher/secondary education ratios are greater than those secondary/primary education for females but not for males, which suggests that their education-wage profiles tend to be convex. As the values of these ratios along the age groups usually decline, the wage differentials between the young and older employees have been compressed.

These changes imply that there was a drastic decline in the relative pay of those with high level of education, while the average pay of women relative to the average pay of men increased remarkably. Thus, drastic pay compression took place during the examined period, mainly during the period 1974-1982, between sexes, age and educational groups.

TABLE 2 Education wage ratios by age groups

| | 1974 | 1982 | 1988 | 1994 | | | | |
|---------------------------------------|------------|------------------|-------------|------|--|--|--|--|
| Males | | | | | | | | |
| Higher education/ Secondary education | | | | | | | | |
| Up to 30 | 1.27 | 1.11 | 1.27 | 1.12 | | | | |
| 31 - 45 | 1.33 | 1.04 | 1.13 | 1.12 | | | | |
| 46 - 65 | 1.27 | 1.25 | 1.08 | 1.20 | | | | |
| All ages | 1.38 | 1.15 | 1.25 | 1.24 | | | | |
| | Secondary | education/Primar | y education | | | | | |
| Up to 30 | 1.06 | 1.04 | 1.03 | 1.12 | | | | |
| 31 - 45 | 1.22 | 1.24 | 1.15 | 1.17 | | | | |
| 46 - 65 | 1.59 | 1.34 | 1.38 | 1.36 | | | | |
| All ages | 1.29 | 1.18 | 1.12 | 1.17 | | | | |
| Females | | | | | | | | |
| | Higher edu | cation/ Secondar | y education | | | | | |
| Up to 30 | 1.39 | 1.30 | 1.12 | 1.06 | | | | |
| 31 - 45 | 1.40 | 1.21 | 1.23 | 1.12 | | | | |
| 46 - 65 | 1.46 | 1.34 | 1.19 | 1.36 | | | | |
| All ages | 1.54 | 1.35 | 1.25 | 1.23 | | | | |
| Secondary education/Primary education | | | | | | | | |
| Up to 30 | 1.38 | 1.15 | 1.25 | 1.24 | | | | |
| 31 - 45 | 1.24 | 1.06 | 1.22 | 1.08 | | | | |
| 46 - 65 | 1.56 | 1.30 | 1.29 | 1.38 | | | | |
| All ages | 1.85 | 1.62 | 1.43 | 1.51 | | | | |

4. CHANGES IN PAY DIFFERENTIALS

A clear picture of the remarkable changes in pay dispersion is apparent at Table 3. which shows the decile shares of earnings and some usual measures of earnings dispersion for each sex. The picture that emerges from this table is rather striking. Between 1974 and 1982 the variance of log monthly earnings decreased by 43% (from .325 to .185) for males and by 50% for females. From 1982 to 1988, there is an increase in the variance of log pay by 9.2% for males and by 15.6% for females, while another 10% increase appeared between 1988 and 1994. Pay dispersion, measured by the variance of log, in middle 1990s is around 60-70% of that of the middle 1970s. It turns out that for males the share of the eight lower deciles increased remarkably between 1974 and 1982, while in 1982-1988 the five lower deciles continue to show increased shares. For females the increase is extended to the lower eight deciles during the 1974-1982 period. Although the various inequality indices do not necessarily show the same inequality trends, the general picture displayed by the values of all inequality measures reported at the bottom of Table 2 is the same. Decomposing the 90-10 decile differential into a 90-50 and 50-10 differential illuminates that wage compression occurred at both the top and the bottom of the wage distribution, but was higher and more consistent at the bottom. As a consequence the pay differentials were compressed drastically between 1974 and 1982, combined with a remarkable growth in real terms, while between 1982 and 1994 the compression was stabilized or slightly reverted, combined with a decline or stagnation of real wages. The dispersion of the pay structure, as shown in Table 3, seems to be much lower than that met in other developed countries (see Katz, Loveman and Blanchflower, 1995; Gosling, Machin and Meghir, 1994), while its rapid decline, especially between 1974 and 1982, seems unusual.

Such drastic narrowing in pay structure indicates that it displays a remarkable flexibility and the question is to what extent changes in productive characteristics or changes in returns to these characteristics can account for these changes. To deal with this question we have estimated simple human capital-type wage equations for each available sample. Log monthly earnings have been regressed upon gender, a quadratic in potential experience, and educational level. Years of potential work experience have been estimated as age minus years of schooling minus pre schooling life span. Although some surveys include more educational levels, for comparison reasons schooling is represented by five dummy variables corresponding to basic educational levels.

TABLE 3
Decile shares of earnings

| Males | | | | | | |
|---------------|-------|-------|-------|-------|--|--|
| Decile | 1974 | 1982 | 1988 | 1994 | | |
| 1 | 3.12 | 3.76 | 4.35 | 3.96 | | |
| 2 | 5.15 | 5.65 | 6.35 | 5.97 | | |
| 3 | 6.23 | 7.23 | 7.47 | 6.88 | | |
| 4 | 7.12 | 8.18 | 8.04 | 7.72 | | |
| 5 | 8.20 | 8.64 | 8.95 | 8.49 | | |
| 6 | 9.18 | 9.79 | 9.65 | 9.34 | | |
| 7 | 10.43 | 10.58 | 10.32 | 10.40 | | |
| 8 | 12.10 | 12.24 | 11.57 | 11.65 | | |
| 9 | 14.87 | 13.95 | 13.33 | 13.55 | | |
| 10 | 23.59 | 19.97 | 19.95 | 21.94 | | |
| Var(log) | 0.325 | 0.185 | 0.202 | 0.221 | | |
| Gini | 0.298 | 0.230 | 0.215 | 0.254 | | |
| Log (90%-10%) | 1.315 | 1.028 | 0.988 | 1.033 | | |
| Log (90%-50%) | 0.674 | 0.479 | 0.408 | 0.519 | | |
| Log (50%-10%) | 0.641 | 0.549 | 0.540 | 0.514 | | |
| Log (75%-25%) | 0.644 | 0.505 | 0.453 | 0.518 | | |

TABLE 3 (Continued)

| Females | | | | | | |
|-----------------|-------|-------|-------|-------|--|--|
| Decile | 1974 | 1982 | 1988 | 1994 | | |
| 1 | 3.13 | 3.69 | 3.99 | 3.93 | | |
| 2 | 5.60 | 5.99 | 6.49 | 6.23 | | |
| 3 | 6.42 | 7.70 | 7.64 | 7.27 | | |
| 4 | 7.34 | 8.09 | 8.29 | 8.19 | | |
| 5 | 8.08 | 8.14 | 9.19 | 8.80 | | |
| 6 | 8.77 | 10.24 | 10.15 | 9.68 | | |
| 7 | 9.64 | 10.81 | 10.93 | 10.65 | | |
| 8 | 11.91 | 12.61 | 12.83 | 11.77 | | |
| 9 | 14.77 | 14.34 | 13.30 | 13.38 | | |
| 10 | 24.28 | 19.92 | 17.83 | 20.10 | | |
| Var(log) | 0.336 | 0.168 | 0.194 | 0.212 | | |
| Gini | 0.292 | 0.223 | 0.194 | 0.231 | | |
| Log (90% - 10%) | 1.256 | 1.028 | 0.988 | 0.952 | | |
| Log (90% - 50%) | 0.700 | 0.513 | 0.406 | 0.465 | | |
| Log (50% - 10%) | 0.556 | 0.492 | 0.526 | 0.487 | | |
| Log (75% - 25%) | 0.552 | 0.498 | 0.494 | 0.474 | | |

Table 4 shows the estimates for the four samples. We see that the absolute value of the estimated coefficients, all highly significant, decreases invariably between 1974 and 1982. This is consistent with the drastic pay compression during that period. The experience profile became flatter and the gender wage differential decreased substantially, while returns to educational levels declined remarkably. The picture after 1982 is less clear cut. There were some tendencies toward increasing differentials between 1982 and 1988 with respect to experience and education, but these changes were relatively small and unstable, and the direction was again reverted during the 1988-1994 period. The gender wage differential shows a declining trend and during the examined period decreased by almost 40%. Note also that the explanatory power of the wage equation, measured in terms of R², falls remarkably and consistently.

Returns to tertiary education (mainly universities and technological institutes established in 1970s) in terms of their wage premium compared to the secondary education graduates declined sharply between 1974-1982, and since then continued to fall slightly and to reach its lowest value in 1994. The returns to higher education in terms of tertiary to secondary log wage premium, as derived from Table 4, halved between 1974 and 1994. A decline is also observed in the returns to secondary education (this group includes those with lower technical education and university dropouts) between 1974-1982 but in 1988 and 1994 they recovered and approached again the 1974 level. Table 4 also reveals a substantial flattening of the potential experience-pay profiles, which is consistent with the declining wage ratios of educational levels along age groups of Table 2.

We turn now to the question of whether the overall changes in pay dispersion are due to changes in productive characteristics or to changes in the returns to these characteristics. In Table 5 we use the estimates of Table 4 to generate the dispersion of predicted wages. The first column of the Table 5 shows the standard deviation of predicted wages using the productive features of each sample weighted by the 1974 wage equation. It turns out that changes in productive characteristics to a certain extent are compatible to the changing pattern of wage dispersion over time. The changes in sample productive characteristics would have created slightly declining pay dispersion between 1974 and 1988 and increasing between 1988 and 1994. In the second column of Table 5 we see that the changing (declining) returns to different characteristics produce a stronger effect upon wage compression (using characteristics of the 1974 sample as weights).

TABLE 4
Log monthly pay equations

| | 1974 | 1982 | 1988 | 1994 |
|-------------------|----------------|----------|------------------|------------------|
| Constant | 11.147 | 11.542 | 11.208 | 11.282 |
| | (.0376) | (.0339) | (.0404) | (.0435) |
| Sex | 398 | 318 | 233 | 2415 |
| | (.0183) | (.0146) | (.0141) | (.0143) |
| Experience | .0508 | .0420 | .0481 | .0436 |
| | (.0021) | (.0019) | (.0019) | (.0022) |
| Experience 2/100 | 0083 | 00066 | 00073 | 0062 |
| | (.0001) | (.00004) | (.0004) | (.00004) |
| Educational level | | | | |
| Tertiary | .9157 | .6329 | .6837 | .5666 |
| | (.0346) | (.0293) | (.0380) | (.0400) |
| Upper secondary | .554 | .4140 | .4721 | .3822 |
| | (.029) | (.0271) | (.0369) | (.0394) |
| Lower secondary | .315 (.036) | | .3118 (.0402) | .2008 (.0413) |
| Elementary | .191 | .1616 | .1452 | .0402 |
| | (.025) | (.0240) | (.0344) | (.037) |
| N | 3779 | 3409 | 3491 | 3575 |
| R² | .369 | .334 | .334 | .282 |
| SEE | .220 | .137 | .147 | .165 |

Source: FES.

TABLE 5
Standard deviation of predicted log monthly pay

| | β74 | | X74 |
|-----|-----|-----|-----|
| X74 | .69 | β74 | .69 |
| X82 | .64 | β82 | .50 |
| X88 | .62 | β88 | .58 |
| X94 | .65 | β94 | .56 |

The main conclusion of the above analysis is that a drastic narrowing of pay differentials took place during the 1974-1982 period between gender, education and age groups, while during the 1982-1994 period pay dispersion does not show a clear trend. The interesting question addressed in the next section is to what extent these changes in pay differentials reflect conventional demand and supply factors or government and union policy.

5. CHANGES IN LABOR SUPPLY AND DEMAND

Changes in wage differentials between groups have been analysed in many countries. These analyses usually regard the different demographic groups as distinct labour inputs, and start with a simple supply and demand framework. Thus, relative wages of the various groups are supposed to be generated by the relative supply of the groups and the demand schedule for the groups. Changes in the age structure, educational attainment and labour force participation, especially of women, may affect relative wages by changing the relative supplies of the groups. Changes in the structure of product demand and in technology are likely to affect relative labour demands, associated with industry shifts in employment. A factor considered as reflecting changes in the demand for labour is the globalization of trade and capital markets, which through competition would cause decline of the demand for unskilled labour, while would increase the demand for skilled labour (Murphy and Welch, 1992).

To the extent that labour market forces have been significant in determining changes of the Greek wage structure, they should explain the documented substantial fall of higher education wage premium. This requires to examine the extent to which changes in the relative numbers of employees by education and changes in relative demands, measured by industry shifts in employment, can contribute in explaining the above wage structure changes. If relative demand for higher education graduates grows at a relative steady rate, changes in the higher education premium should be inversely related to changes in the rate of growth of their relative supply. Table 6 shows that, starting from rather low level, there has been an increasing trend in the relative supply of highly educated during the examined period. While in 1971 less than 5% of the Geek labour force was holding a higher level degree, in 1993 it reached the 19%. Moreover, the rate of annual growth appears accelerating in the 1980s (8.1%) compared to that in 1970s (6.6%). The sharp fall in the university wage premium during the period 1974-1982 is consistent with the corresponding supply increases. However, the subsequent slight reversion of the 1982-1988 higher education premium cannot be explained by the corresponding supply changes. While during the '80s the supply of educated workers was accelerating, they partially regained their wage advantage. Figure 1 displays the labour force shares of the three basic educational levels over the examined period, as far as available data allow. The period is clearly characterized by a consistent increase in the educational level, but not by a continuous downward trend in wage differentials. Thus, there is not a negative relation between relative supplies and relative wages, which is expected by the simple model with stable relative demand and increasing relative supply.

TABLE 6
Percentage of labour force by education level

| | 1971 | 1974 | 1981 | 1991 | 1993 | 1971-81 | 1981-93 |
|---------------------|------|------|------|------|------|---------|---------|
| Higher education | 4.9 | 6.4 | 8.3 | 18.1 | 18.8 | 6.6 | 8.1 |
| Secondary | 11.4 | 13.7 | 18.1 | 25.2 | 26.7 | 5.9 | 4.1 |
| Primary | 81.5 | 72.8 | 66.8 | 50.7 | 44.6 | -2.0 | -2.4 |

Turning next to demand side, we confine our analysis to examining the role of sectoral shifts in employment using simple "fixed manpower requirements" models proposed by Freeman (1980). The data used come from the General Censuses and the LFSs, which provide information on the educational qualifications of the employees by the nine broad sectors. The basic formula giving the relative demand for education level j at time t is

Djt =
$$\Sigma \alpha ji(Ni/N)t$$

where Ni is employment in sector i, N is total employment, and $\alpha ji = Nji/Ni$ is the fixed labour skill coefficient calculated as the ratio of the number of workers in education j and industry i to total employment in industry i.

The results of this exercise, expressed in annual rates of change, are shown in Table 7. The basic pattern is that the relative demand for highly educated employees grows at an almost equal rate during the 1971-1981 and 1982-1988 periods, and at much lower in the late 1980s and early 1990s. Thus, our results suggest that employment changes, indicating underlying demand changes, do not offer very much in explaining the fall of wage premium of graduates in the 1980s.

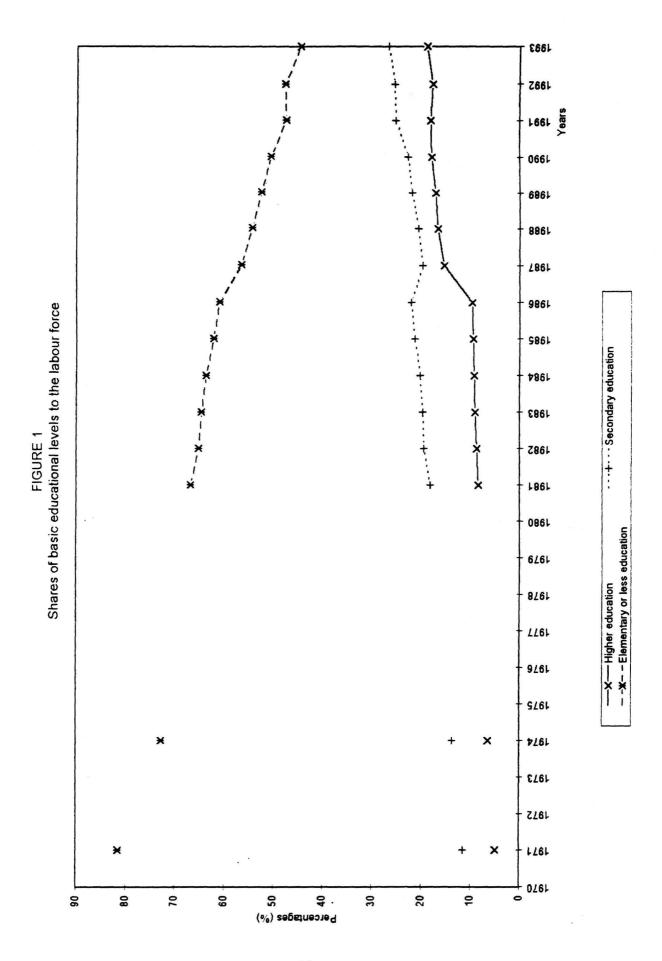


TABLE 7
Demand shift indices

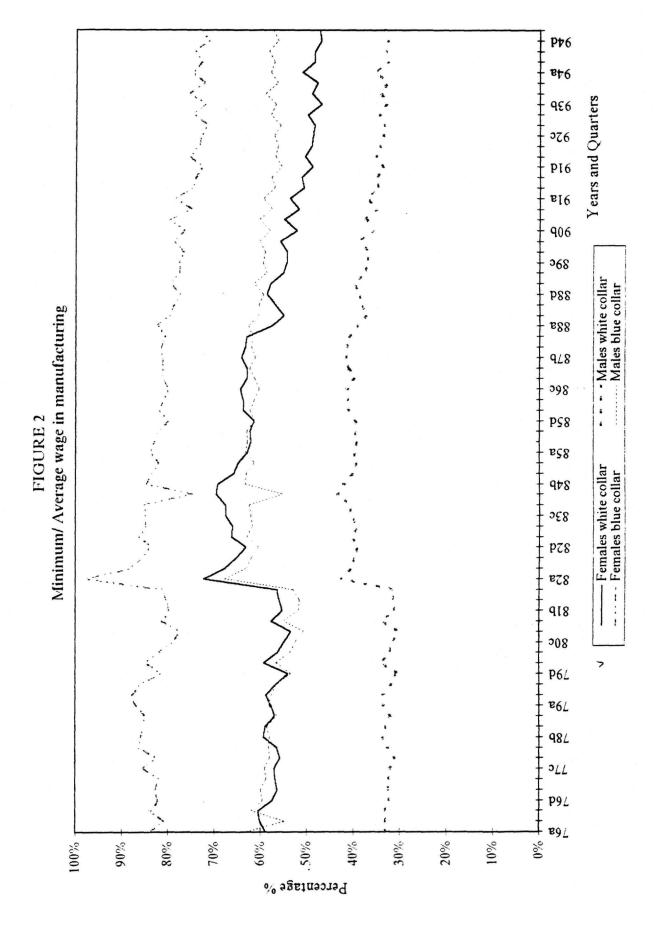
| | 1971-1981 | 1982-1988 | 1988-1992 |
|----------------------|-----------|-----------|-----------|
| Less than elementary | -5.53 | -7.01 | -8.98 |
| Elementary | 0.08 | -1.60 | -2.13 |
| Secondary | 4.24 | 0.61 | 5.78 |
| Higher | 4.05 | 4.19 | 1.46 |

6. THE EFFECTS OF MINIMUM WAGES AND INCOMES POLICY ON PAY DISTRIBUTION

Other researchers have emphasized the significance of labour market institutions in explaining the observed differences between various countries in the recent changes in earnings differentials (Freeman, 1994; Freeman and Katz, 1995). Here the wage setting mechanisms and the role of trade unions have been considered.

Greece is a country with long tradition of state intervention in industrial relations and wage setting. Although minimum wages in Greece are determined formally through collective bargaining, they reflect government's policy, which intervenes either through the arbitration procedure, or through the announcement of wage increases norms before the annual wage bargaining. Equal minimum pay for female wage earners was gradually implemented during the period 1975-1978, while a young sub minimum was abolished in 1989. A partial indexation scheme of the minimum wage was established in Greece in the beginning of 1982, which provided for automatic pay adjustments every four months according to ex post consumer price index changes (ATA). Moreover, the indexation was graduated, so the low paid workers received the highest increase, while those in the right tail of the pay scale did not receive any increase. This indexation scheme led to drastic increase in labour unit cost, and, combined with high public budget deficits, accelerated inflation rate and increased the current account deficit next years. To control the macroeconomic imbalances in 1985 the same government modified the indexation scheme from an ex-post to an ex-ante basis, while import prices were excluded from the projected inflation estimates. Furhtermore a law was passed making the new scheme compulsory for both the public and private sector up to the end of 1987 and strict penalties were charged on companies breaking these provisions. These indexation modifications, which were effectively applied, yielded an sharp decline in real wages during the 1986-1987 period.

The interesting question is to see how much the increases in the minimum wage and incomes policy in general have contributed to the observed pay compression. To do this one has to choose the relevant minimum wage. However, there is not a unique minimum wage applied to all employees. In Greece the relevant term is basic wage, which consists of the minimum wage plus the family allowances plus the tenure allowances, which are obligatory by law for all employees. Figure 2 displays the ratio of minimum to average wage, the so called toughness index, for male and female blue and white collar workers in manufacturing over the examined period. The general pattern of the figure is that relative value of minimum wage is rather high, especially for women. Moreover, these ratios reach their peak in 1982, reflecting the introduction of the new indexation scheme by the



socialist government, and coincide with the above documented drastic wage compression in 1982. Thus, minimum wages and the broader incomes policy contributed substantially in the reduction of the 1982 pay differentials. This is supported by the fact that, according to the 1982 FES data, the nominal wage increases of the usually low paid workers, i.e. young, less educated, females, were significantly higher than the average.

The slight reversion of pay compression in 1988, in terms of the value of the log variance and the higher education premium, is again consistent with the then changes in incomes policy, which that year stopped imposing a wage rise ceiling to the private sector and many companies adjusted skilled labour rewards freely. Finally the abolition of the ATA scheme in January 1991 and the adoption of other measures towards the liberalisation of the labour market seems to have contributed to the slight observed pay widening during the 1988-1994 period.

7. CONCLUSIONS

The modest ambition of this paper has been to document the wage changes by various dimensions in Greece in the recent decades and to examine various alternative explanations for these changes. The results suggest that take home pay after a substantial increase during 1974-1982, declined during 1982-1988 and increased slightly in 1988-1994. In fact the pay of educated Greeks in 1994 seems to be lower than their counterparts in 1974. Furthermore, an overall, eventhough oscilating, pay compression, between sexes, educational and age groups took place during the examined period. Greek society has afforded remarkable relative wage changes, without drastic social strains.

While this pay compression seems consistent with the remarkable increase of the educational level of the labour force, because of the observed slight diversions of the wage structure, the relative supply growth of the educated workers offers little to the explanation of the recent relative pay changes. Institutional factors, like minimum wage and incomes policies, turn out to be rather important for such changes in the wage structure.

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