

## **EGGE – EC’s Expert Group on Gender and Employment**

### **National Reports on the Unadjusted and Adjusted Gender Pay Gap**

#### **Greece**

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European Commission Experts Group on Gender and Employment

THE GENDER PAY GAP IN GREECE

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## Introduction

Greece has a relatively narrow gender pay gap in comparison with its partners in the EU. According to European Structure of Earnings Survey (ESES) data, in 1995, the female-male pay ratio in Greece, based on average gross hourly earnings, was equal to 77%; in Sweden – the EU Member State with the narrowest gender pay gap – the ratio rose to 82% while in the UK – the EU Member State with the widest gap – to 59%.<sup>1</sup>

However, the European Community Household Panel (ECHP) gives a quite different picture of the country's relative position. In 1995 the female-male pay ratio in Greece, based on average net hourly earnings, was 85.7% and equal to the EU average.<sup>2</sup>

The two data sets differ with respect to coverage and the kind of wage data collected. It is therefore explicable that the gender pay gap is smaller according to ECHP data as taxation operates more at the disadvantage of male than female net earnings, since men enjoy higher gross wages than women and tax rates increase with income. Moreover, the ECHP covers the employees of the whole economy, while the ESES has omitted the employees many service industries, mostly those where public sector employment is predominant. As indicated by ECHP data, in 1995, the gender pay ratio rose to 79.5 and 91.6% in the private and public sectors respectively.<sup>3</sup>

The female-male earnings ratio varies across the earnings distribution. In Greece, the lowest gender earnings ratio is found at the middle of the earnings distribution while the highest ratio at its lower tail. ECHP data for 1995 show that the gender pay gap was on average 87% at the 10<sup>th</sup> percentile, 77.7% at the 50<sup>th</sup> and 79.5% at the 90<sup>th</sup>.<sup>4</sup>

This report aims at providing a clear picture of the trends of the gender pay gap in Greece, an explanation of the gap and its trends and a critical assessment of national policy meant to close it. Section 1 deals with the first issue, while the following two sections with the factors affecting the gender pay gap and its trends. Section 2 reviews the existing literature which has made use of econometric techniques and section 3 discusses in detail the institutional factors that may explain the extent of the gap. In the final section we refer to and assess policies meant for tackling the gender pay gap.

Before proceeding to our analysis, we should note that the 'unadjusted' gender pay gap, a term adopted by the EU in recent years and used in this report in brackets, refers to the observable gap in men's and women's average earnings (either gross or net of taxes). The 'adjusted' gender pay gap, a term also adopted by the EU and used in this report in brackets, refers to an estimated gap after controlling the 'unadjusted' gap for gender differences in productivity-related characteristics of employees and of the jobs they hold. In mainstream economic theory and literature the 'adjusted' pay gap is meant to be an *upper bound* of labour market discrimination. The part of the 'unadjusted' gender pay gap explained by gender differences in personal and job characteristics is attributed to different educational and occupational choices made by men and women and/or 'pre-entry' gender discrimination. Interaction between labour

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<sup>1</sup> Calculated by Barry et al. (2001), table III.11, p. 89.

<sup>2</sup> Average of 14 EU Member States i.e. E-15 except Sweden.

<sup>3</sup> Calculated by Bary et al. (2001), table III.11, p. 89.

<sup>4</sup> Calculated by Pierce (1999), Table 4, p. 41.

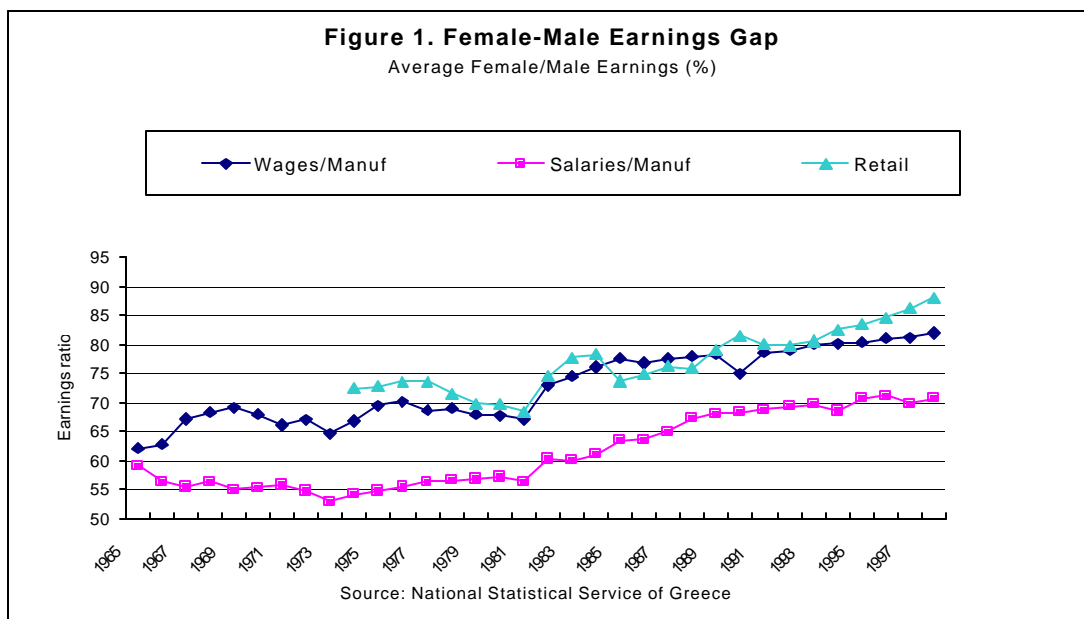
market discrimination and gender differences in choices has to be ignored, even when recognized, to allow for decomposition and adjustment of the pay gap.

## 1. ‘Unadjusted’ gender pay gap, low pay and wage inequality over time

In the past twenty years women’s position in the Greek labour market has been radically changed. Female activity rates have risen considerably, notwithstanding drastic decline of employment in agriculture where women had traditionally higher involvement than in the urban sector, though mostly as unpaid family workers. Moreover, gender differences in educational attainment have actually disappeared since the beginning of the 1990s and female employment patterns have become less discontinuous, especially among younger generations of women. Improvement of women’s position in the Greek labour market has also been reflected in women’s relative pay. The female-male earnings ratio in a great number of sectors has followed an upward trend during the eighties and nineties. However, in some high-wage sectors, this trend has been reversed since the late 1980s.

### 1.1 Female/male earnings ratio over time

The existing data sources on wages provide long time series only for a small number of sectors of the Greek economy. The trends in female-male earnings ratios calculated from these time series have varied across sectors and forms of pay during different periods (Figures 1 & 2).

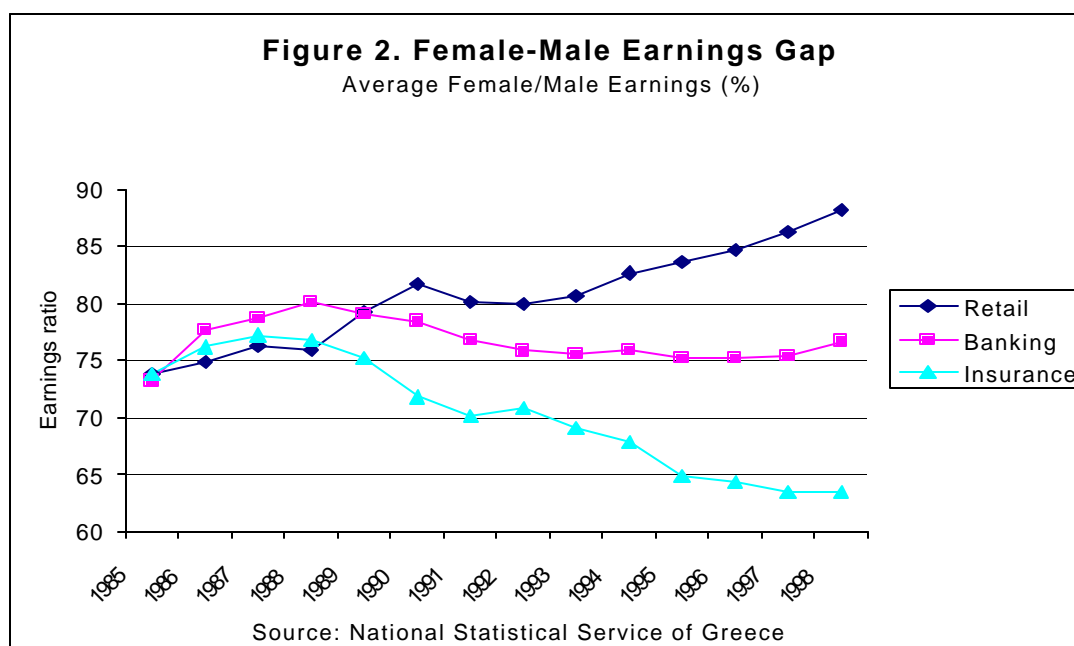


For instance, while women’s relative monthly earnings in manufacturing declined between 1965 and 1973, their relative hourly earnings increased. The opposite happened between 1976 and 1981: women’s relative monthly earnings in manufacturing rose, while their relative hourly earnings in the same sector fell in parallel with female relative monthly earnings in retail. It is nevertheless a fact that in 1981 the gender gap of monthly earnings in manufacturing was wider than in 1965. In

contrast, the gender gap of hourly earnings in the same sector was narrower. Ever since 1981 the female-male earnings ratio has followed an upward trend in both manufacturing and retail. It seems that this also occurred in banking and insurance. In these sectors though the trend has been reversed since the late eighties.

From a long term perspective the shrinking of the gender pay gap is undeniable. The gender pay ratio in manufacturing, based on hourly wages, rose from 62.1% in 1965 to 82% in 1998, whereas that based on monthly wages in the same sector from 51.9 to 70.8% across the same period. As far as services are concerned, the gender pay ratio in retail increased from 72.5 in 1974 to 88.1% in 1998, in banking from 73.2% in 1985 to 76.7% in 1998. Only in the insurance sector the gender pay gap increased, since the female-male earnings ratio based on monthly wages fell from 73.8 to 63.5% between 1985 and 1998, after having reached in 1988 the peak of 76.7%.

The explanation of these trends needs further research. It requires overcoming data limitations for the period before 1995, which is extremely difficult if at all possible.



## 1.2 Low pay and wage inequality by gender

Greece occupies an intermediate position among EU Member States regarding the incidence of both low and high pay (Table 1). According to 1995 ESES data, 10% of Greek employees earn less than two thirds of the median for all employees while 20% over two thirds of the median for all employees.

Data on the incidence of low pay by gender and length of working week are presented in Table 2. It is noteworthy that, although the incidence of low pay is about 2.5 times higher for women full-timers than for their male counterparts, the incidence of low pay among women part-timers is lower than among men part-timers. Moreover, the incidence of low pay among women is higher for full-timers than for part-timers.

Finally, it should be mentioned that 56.3% of low-paid workers are women, with low pay defined as equal or less than two thirds of median for all employees.

Unfortunately, we cannot follow low pay trends by gender over time, since socio-economic research has not dealt with this issue to date.

**Table 1: ESES 1995. Wage Inequality and Incidence of Low and High Pay**

	Decile ratios			Incidence of low/high pay	
	D9/D1	D9/D5	D5/D1	%=2/3 median	%=2/3 median
Austria	2.66	1.77	1.50	9.9	16.6
Belgium	2.38	1.71	1.39	5.6	15.2
Denmark	2.49	1.71	1.46	8.0	15.4
Finland	2.10	1.55	1.35	4.7	11.4
France	3.11	2.12	1.47	8.2	21.6
Greece	2.78	1.85	1.51	10.4	20.0
Ireland	3.47	2.06	1.69	15.8	22.8
Italy	2.40	1.73	1.39	3.7	16.7
Luxembourg	2.82	1.78	1.58	13.5	17.4
Portugal	4.13	2.59	1.60	16.0	27.0
Spain	3.48	2.02	1.72	19.2	22.9
Sweden	1.91	1.51	1.27	1.1	16.2
UK	3.60	2.03	1.77	19.1	21.6

**Source:** Salverda et al. 2001. Table 1.1.B-Annex.

**Table 2: ESES 1995: Incidence of low pay by gender and full/part-time contract**  
% of total

	Decile 1	=2/3 median	quartile 1
Male full-time	6.6	6.9	17.5
Female full-time	16.3	17.0	39.9
Male part-time	14.6	15.1	27.3
Female part-time	11.8	12.5	28.2
All males	6.7	7.0	17.5
All females	16.2	16.9	39.7

**Source:** Own calculations from Table 1.7.B-Annex in Salverda et al. 2001.

**Table 3. Family Expenditure Surveys. Wage Inequality by Gender**

	1974		1982		1988		1994	
	Men	Women	Men	Women	Men	Women	Men	Women
Var (logw)	0.325	0.336	0.185	0.168	0.202	0.194	0.221	0.212
Gini	0.289	0.292	0.230	0.223	0.215	0.194	0.254	0.231
D9/D1	3.725	3.511	2.795	2.795	2.686	2.686	2.809	2.591
D9/D5	1.962	2.014	1.614	1.670	1.504	1.501	1.680	1.592
D5/D1	1.898	1.744	1.732	1.636	1.716	1.692	1.672	1.627

*Note:* For rows 3,4,5, own calculations from Kanellopoulos 1997, Table 3, p. 24. Ratios are based on average decile earnings of all employees of each gender.

**Source:** Kanellopoulos (1997).

As far as wage inequality is concerned, Greece occupies as well an intermediate position among EU Member States (Table 1). This is true not only overall, but also for both the upper and lower part of the wage distribution as reported by the comparative ratios of average earnings of the 9<sup>th</sup> to the 5<sup>th</sup> and the 5<sup>th</sup> to the 1<sup>st</sup> deciles respectively. Trends in wage inequality by gender have been analysed by Kanellopoulos (1997) over the period 1974-1994. His results are presented in Table 3.

The data reveal similar trends in wage inequality for men and women. A drastic and rapid narrowing in pay structure has occurred between 1974 and 1982, whereas a less pronounced and slower widening between 1982 and 1994. Pay dispersion - measured by the variance of log earnings - in mid 1990s was 68% of that in mid 1970s for male employees and 63% for female employees. Put in other terms, between 1974 and 1994, the earnings ratio of the 9<sup>th</sup> to 1<sup>st</sup> decile was reduced by 24.6 and 26.2% for male and female workers respectively. Moreover, in the mid 1970s as well as twenty years later, the female pay structure was slightly more compressed than the male one. By decomposing the 9<sup>th</sup> to 1<sup>st</sup> decile earnings differential into a 9<sup>th</sup> to 5<sup>th</sup> and 5<sup>th</sup> to 1<sup>st</sup> decile differentials, Kanellopoulos has also proved that wage compression has taken place at both the top and bottom of the wage distribution, but was higher and more consistent at the bottom, and has attributed these changes to institutional factors.

## **2. Determinants of the ‘unadjusted’ gender pay gap and estimates of the ‘adjusted’ gap: literature review**

Efforts to explain the gender pay gap in Greece have been scant. Nearly all available studies have used econometric techniques to decompose the ‘unadjusted’ gap into an ‘explained’ and an ‘unexplained’ part; techniques that were first developed by Oaxaca and Blinder and then refined by Neumark and Oaxaca and Ransom. However, these studies differ in several respects. The most important differences are related to the wage function used for decomposition i.e. the inclusion or not of a selectivity term in the earnings equation and the individualistic/macroeconomic determination of wages.

Except for literature dealing exclusively with the gender pay gap in Greece, two studies have been recently carried out by international organisations trying to explain inter-country differences in the size of the gender wage gap partly through differences in wage structure and wage-setting institutions. These studies, which use the Juhn-Murphy-Pirece decomposition method, have included Greece among the countries selected for comparative analysis. We report their results separately in this section.

### ***2.1 Oaxaca-Blinder-Neumark-Ransom decomposition***

Three papers have been published so far using the Oaxaca-Blinder-Neumark-Ransom technique to decompose the ‘unadjusted’ gap into an ‘explained’ and an ‘unexplained’ part. The first is attributable to gender differences in human capital endowments or/and to differences in the characteristics of jobs that men and women occupy, while the second to gender wage discrimination and gender differences in unobservable productivity-related features of employees/jobs. Gender differences in labour market participation propensities have been added to the explanatory factors of the gender pay gap by the authors of the third paper and have also been defined by them as an important component of the unexplained part of the gap besides wage discrimination.



- Kanellopoulos C. (1982), ‘**Male-female Pay Differentials in Greece**’, *Greek Economic Review*, Vol. 1, No. 2, pp. 222-241.

Data and sources

Individual data referring to October 1964, from a sample survey on gross monthly earnings (overtime included) of employees in manufacturing firms of the Athens area.

Wage equation

Dependent variable: natural log of monthly wages

Independent variables: years of schooling, seniority withing a given firm, potential previous experience, firm size, employment growth of the firm, occupation (one digit), industry (two dummies).

Gender pay gap

Unadjusted pay gap = 37.5%

Explained part of the differential:

(1) 72.3% (females paid according to male pay structure); Adjusted pay gap = 10.4%

(2) 24.1% (males paid according to female pay structure); Adjusted pay gap = 28.5%

Interesting findings

Shorter seniority within firm, previous experience and unfavourable occupational distribution of female employees account for the largest part of the explained pay differential. Education differences do not account for any important part.

Policy recommendations: incentives for women to remain in the labour market, easier entrance to highly paid occupations and equal treatment in employment.

- Psacharopoulos G. (1983), ‘**Sex discrimination in the Greek Labour Market**’, *Journal of Modern Greek Studies*, Vol. 1, No. 2, pp. 339-358.

Data and sources

Individual data on annual earnings collected in spring 1977 from a sample survey covering 8,756 employees in nine cities.

Wage equation

Dependent variable: annual earnings

Independent variables: years of schooling, actual occupation experience and its square

Gender pay gap

Unadjusted pay gap = 34.8%

Explained part of the differential: 11% (females paid according to male pay structure)

Adjusted pay gap = 31%

Policy recommendations: equal treatment of women in the labour force rather than providing women more education or increasing their attachment to the labour force, since human capital variables account for a small part of the gender pay gap.

## ***2.2 Juhn-Murphy-Pierce decomposition***

The decomposition method developed by Juhn-Murphy-Pierce allows to assess the relative importance of gender-specific factors, as distinct from the underlying wage structure, in the determination of the gender pay gap. The latter is the outcome of a) gender differences in productivity characteristics b) the relative position of women in the male residual wage distribution c) the standard deviation of this distribution. The inferior position of women in the male residual wage distribution captures the impact of gender differences in unobservable productivity characteristics and discriminatory wage-setting practices, while the standard deviation of this distribution represents the independent impact of overall wage dispersion.

This method of decomposition has been mostly used to explain inter-country differences of the gender pay gap. Two recent studies that include Greece in the group of countries compared have been published by the World Bank and OECD. Because the results of decomposition in these studies are expressed as natural logarithms, we have made our own calculations of the (un)adjusted gender pay gap as percentage.

- Rice P. (1999), '**Gender Earnings Differentials: The European Experience**', *Working Paper Series*, No. 8, The World Bank.

### Data and sources

Wave 2 1995 ECHP microdata on gross monthly earnings of employees working 15 hours or more for eight EU countries: Denmark, France, Germany, Greece, Italy, Portugal, Spain, UK. For Hungary, microdata from the Hungarian Household Panel.

### Wage equation

Dependent variable: natural log of monthly earnings corrected for hours of work

Independent variables: education (dummies), years of tenure in the current job, potential previous labour market experience, length of time spent out of employment prior to current job, occupation (dummies), industry (dummies), firm size (dummies).

### Gender pay gap

Unadjusted pay gap: 19.6%

Explained part of differential: 40.1%

Adjusted pay gap for differences in observable characteristics: 11.7%

### Interesting findings

Female employees are on average treated as equivalent to a male worker at the 39<sup>th</sup> percentile of the residual wage distribution. The high ranking of Greek women in the distribution of male wage residuals relative to the other eight countries studied (3<sup>rd</sup> rank) means that gender differences in unobservable productivity characteristics and wage discrimination are relatively small in Greece. Small gender differences in unobservable characteristics are attributed by the author of the paper to selectivity effects, since the Greek female participation rate is very low.

Furthermore in Greece, like in Spain, Portugal and Italy, the gender gap in measured productivity-related characteristics is smaller than in Germany, France, the United Kingdom, Denmark and Hungary. According to the author, this is due to high levels

of education among women in paid employment in southern Europe as well as to lower levels of occupational and industrial segregation than in northern Europe.

- OECD (2002), **‘Women at work: who are they and how are they faring’** in *Employment Outlook 2002*, Chapter 2, Paris, pp. 61-125.

#### Data and sources

Wave 5 1998 ECHP microdata on gross monthly earnings in the main job (including overtime) for 13 EU countries (Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, UK).

#### Wage equation

Dependent variable: natural log of gross hourly wages

Independent variables: education, potential experience squared, tenure, permanent contracts, public/private sector, occupations (fifteen).

#### Gender pay gap

Unadjusted pay gap: 14.8%

Adjusted pay gap for the whole wage structure: 12.4%

Adjusted pay gap for the wage structure and observable characteristics: 11.7%

#### Interesting findings

Once the gender pay gap is adjusted for the effect of the wage structure, Greece appears to have the third smallest gap among the 13 EU countries compared, after Italy and Spain. Except for the lowest wage gap, Southern European countries also have the lowest female employment rates and measures of occupational segregation.

Cross-country correlations between the unadjusted gender wage gap and its components with the female employment rate and levels of occupational segregation undertaken by the authors of the study have confirmed a positive relationship between the size of the gender wage gap, on one hand, the size of female employment rates and the degree of occupational segregation on the other. The cross-country correlation results are even more refined and have led to the following conclusions.

First, female wage and salary employees tend to be more educated than their male peers in countries where there are fewer women in employment. Similarly, the gender gaps in unobserved productivity characteristics tend to be smaller in these countries.

Second, there is a strong positive relationship only between occupational segregation by gender and the unobserved productivity characteristics component of the gender wage gap. This evidence suggests that the same differences in unobserved characteristics or discriminating practices that are at the origin of occupational segregation by gender also explain cross-country differences in the residual gender wage gap that are not attributable to cross-country differences in the wage structure.

#### Note

It should be reminded that the component ‘unobserved characteristics’ of the wage gap also includes the effects of discriminatory wage-setting practices against women and of measurement errors in observed productivity characteristics of employees and jobs on the relative position of women in the male residual wage distribution.

### ***2.3 Other methods for explaining the ‘unadjusted’ pay gap***

Two recent studies of the ‘unadjusted’ pay gap in Greece have used variants of the Oaxaca-Blinder-Neumark-Ransom decomposition. The originality of the first lies not so much in the integration of a participation term in the wage function to correct for sample selectivity bias but rather in the interpretation of the residuals of the Oaxaca-Blinder decomposition equation once the participation term is included. In the second study it is the wage equation which is constructed in a totally different way. Instead of using a vector of individual characteristics for wage determination, the authors use a vector consisting of the differences of individual from average characteristics in sectors and occupations. Consequently, the gender pay gap is conceived as the joint outcome of gender differences in average characteristics and gender differences in the deviation of individual from average characteristics.

- Kanellopoulos C. & K. Mavromaras (2000), ‘**Male-female labour market participation and wage differentials in Greece**’, *Discussion Papers*, No. 71, Athens: Centre of Planning and Economic Research.

#### Data and sources

Individual data from 1988 and 1994 Family Expenditure Surveys on gross weekly wages of employees aged 17-60.

#### Two-stage Heckman procedure

The authors apply Heckman’s method of selectivity correction. This implies that the propensity of labour market participation for each individual is estimated separately from a labour supply function and then included as an additional term in the earnings equation to provide ‘unbiased’ earnings estimates. The wage gap decomposition has been recalculated so as to take into consideration the impact of participation decision.

1<sup>st</sup> stage: Probit analysis of labour market participation

Variables: age (three dummies), education (two dummies), marital status (two dummies), number of children under 6, number of children aged 6-13, household head (dummy), household size (number of household members), number of retired household members, rented house (dummy), second home (dummy), area of residence (urban, semiurban, rural).

2<sup>nd</sup> stage: OLS analysis of wage determination:

Dependent variable: natural log of weekly earnings

Independent variables: age (three dummies), education (two dummies), marital status (two dummies), sector of activity (four dummies), area of residence (three dummies), managerial job (dummy), participation propensity.

#### Gender pay gap

Unadjusted pay gap 1988: 24.2%

Explained part of differential: 28% (females paid according to a pooled pay structure)

Adjusted pay gap 1988: 17.4%

Unadjusted pay gap 1994: 28.9%

Explained part of differential: 46% (females paid according to a pooled pay structure)

Adjusted pay gap 1994: 15.6%

### Interesting findings

One of the main conclusions of the paper is that 70% of the gender pay gap in 1988 and 96.2% in 1994 is the result of gender differences in participation propensities. Women pay a large premium in terms of lower wages in order to be employed. Wage discrimination is non-existent and discrimination against females confines itself to access to employment i.e. to the participation process.

Policy recommendations: Anti-discrimination legislation and policy in favour of equal pay are ineffective for closing the gender pay gap. Policies should address above all participation issues. Several costs which make the employment of women more expensive to the employer should be pooled in order to put men and women on an equal footing in the labour market and reduce the incentive of employers to employ women only when they are willing to accept lower wages. A prime target should be the costs of maternity leave, which can have a serious negative impact in an economy with predominantly small size employers. Regulations regarding female hiring should become more stringent to avoid discrimination against women.

### Critical comments

1. Heckman's correction of women's earnings functions allows us to estimate the wage offers of all women irrespective of current labour force status. However, the kind of gender difference that discrimination theory and research wants to study and explain is the one arising in the labour market. Even if working women is a self-selected group with better than average characteristics than the whole group of women, these are the ones whose productive characteristics are evaluated by employers. Correction for selectivity bias is therefore irrelevant when studying wage discrimination against women employees in the labour market.
  2. When re-writing the equation of decomposition of the gender pay gap in order to take into consideration the correction of the wage equation by inclusion of the participation propensity of each individual, the authors of the paper admit that the two terms in which the residuals of the corrected female and male wage equations are decomposed can represent either the part of the wage gap which can be attributed to the unexplained influence of gender differences in participation<sup>5</sup> or could be viewed as an estimate of wage discrimination. They have opted for the first interpretation and have thus made wage discrimination totally disappear from the results of their analysis. If they had chosen the second interpretation than the contribution of gender differences in participation propensities to the wage gap would be drastically reduced whereas that of wage discrimination significantly increased. The strong conclusions of their paper are thus arbitrary.
- Karamessini M. & E. Ioakimoglou (2002), '**Determinants of the Gender Pay Gap in Greece**', paper presented at the 23<sup>rd</sup> Conference of the International Working Party on Labour Market Segmentation, Spetses–Greece, 18<sup>th</sup> – 20<sup>th</sup> July.

### Data and sources

Individual 1995 ESES data on gross monthly and annual earnings of employees working in the following sectors: mining and quarrying, manufacturing industries, electricity, gas and water supply, wholesale and retail trade, transport, storage and communication, hotels and restaurants and financial intermediation.

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<sup>5</sup> Explained influence is measured by gender differences of the coefficients of participation propensity.

## Method

The Oaxaca-Blinder-Neumark-Ransom decomposition procedure is used in the paper. But calculations are based on a radically different approach of wage determination from that of neoclassical theory, which is inspired by classical political economy. Average wages are determined socially and not as a sum of individual earnings. Occupational averages are determined by the value of the labour force, in the Marxian sense, and the balance of power between workers and employees. Differences in average earnings between sectors are considered as the result of the movement of capital searching for higher profit and are determined by sector differences in occupational mix, oligopoly power and 'rent' sharing capacity. Individual earnings deviate from occupational and sector averages because of diverging individual characteristics (personal, job, employer) and differences in the individual bargaining power of employees vis-à-vis their employer.

An immediate result of this macro-economic approach of wage determination is that the dummy variables for occupations and sectors, used in 'traditional' specifications of the wage equation, are replaced by average wages by occupation and sector used as reference or target wages by employers and employees in individual bargaining. An advantage of the approach is that the basic problem of the traditional specification of the wage equation is avoided. Occupation and sector averages don't pick up the effect of human capital variables as it happens when occupation/sector dummies are used.

## Wage equation

Dependent variable: difference of individual hourly wage rate from the average wage rate in occupation in the specific sector (wages are expressed as natural logarithms)

Independent variables: age of worker and age squared, education attainment level (dummies), tenure and tenure squared, marital status (dummy), nationality (dummy), overtime work (dummy), shift work (dummy), supervision (dummy), coverage of employees by sector or company level collective agreement (dummy), public/private ownership of firm (dummy), permanent/temporary contract (dummy), ln of size of establishment, ln of average wage in occupation in a specific sector.

## Gender pay gap

Calculations are based on two data sets, one for the industrial sector and one for the service sector

Unadjusted pay gap industrial sector: 33.2%

Explained part of differential: 73.3%

Adjusted pay gap: 8.8%

Unadjusted pay gap service sector: 29%

Explained part of differential: 76%

Adjusted pay gap: 6.9%

Interesting findings: 57% of the gender pay gap in industry and 51% in services are due to occupational and sector segregation (in services the effect of sector segregation is minimal). Approximately 20% of the gap can be attributed to gender differences in observed individual characteristics, mostly accumulated and recent experience of the

worker (age and tenure). Education levels have an insignificant effect while job and employer characteristics a moderate one.

### **3. Institutional factors affecting the gender pay gap**

An entirely different way of explaining the gender pay gap from *econometric decomposition* is the *comparative institutional* approach.

'This approach begins with the observation that gender pay inequality is the result of entrenched institutional norms, labour market policy and employer practice which shape, in a way that also reflects structural conditions of the labour market and broader conditions of particular society, labour market opportunities for different groups of workers and the relative value of occupations in society' (Grimshaw & Rubery 2002, p. 5).

Most comparative institutional analyses of the gender pay gap have focused until now on the interaction between employment segregation by gender and the wage determination system and have demonstrated the role that societal differences play in shaping the exact form of this interaction (Rubery & Fagan 1994, Rubery et al. 1997). In existing literature for the gender pay gap in Greece, only one study follows this approach by attempting to show how wage determination and employment segregation interact and jointly shape the gender gap (Cavouriaris & Karamessini 1993).

One dimension of the comparative institutional approach, namely the degree of wage inequality or the dispersion of the wage structure, has been integrated through the Juhn-Murphy-Pierce decomposition method into comparative econometric analyses to explain international differences of the gender pay gap (Blau & Kahn 1992, 2001). Yet the interaction between employment segregation, wage-setting mechanisms and the overall dispersion of the wage structure cannot be explained without qualitative information on the institutional setting of wage determination.

Having as a starting point that women are concentrated more than men at the bottom of the earnings distribution, the greater the extent of collective agreements coverage and the more efficient the system of wage protection, the higher women's relative pay. Moreover, it seems likely that wage-setting systems of centrally-determined pay entail smaller gender wage differentials by tending to compress the wage structure. Finally, the system of job grading and the form of payment system can seriously affect gender pay differentials by determining returns to skill, qualification, seniority, performance etc. We briefly examine some of these issues below.

#### ***3.1 The system of wage determination and gender inequality in pay***

In the beginning of the 1990s a new institutional framework for collective bargaining was introduced by Law 1876/1990. In addition, the statutory indexation of wages in the public sector was abolished from January 1, 1991, after being in effect for nine years. The abandonment of this system had a direct effect on pay determination in the private sector where it served as a norm and secured wage protection from inflation.

The Greek collective bargaining system provides for five kinds of agreements: national general, sector, national occupational, regional occupational and company agreements. National general collective agreements (NGCA) set minimum wages and salaries for private sector employees and for those working in the public sector under

private law contracts. NGCAs are concluded between the main union confederation of private sector employees, GSEE and the largest and most representative nation-wide employers associations. The NGCA has particular significance and value because

‘it provides a safety net for workers not covered by any other CA; its stipulations on institutional issues apply automatically to all private sector employees; it serves as a pilot in lower level bargaining’ (Karamessini 1997, p. 7).

Law 1876/1990 extended the scope for company level bargaining and opened the way for industry-level bargaining to the detriment of traditional occupational bargaining favoured by the pre-existing collective bargaining legislation. Sector and company agreements now take precedence over occupational agreements. However, the transformation of previously occupational agreements covering directly productive workers of an industry to industry-wide sector agreements is a rather slow process.

Within the Greek collective bargaining system, the different bargaining levels are largely articulated. Sector and occupational-level bargaining uses percent increases of national minimum wage rates as reference, while company-level unions routinely claim a supplement over sector and occupational minima. Individual bargains between employers and employees can set rates above those fixed by collective agreements.

All collective agreements in Greece are legally binding only for signatory employers’ organisations or individual employers and apply to the members of the signatory unions. However, the Minister of Labour can extend sectoral and occupational agreements, either on his own initiative or by application from unions or employers to cover non participating firms and non unionised employees, provided that the agreement already covers 51% of the relevant workforce. As for company agreements, they apply directly to all the employees of the firm. This is why, in spite of low unionisation rates, coverage by collective agreements is very high in Greece.

According to Law 1876/1999 social partners have a legal obligation to negotiate. Mediation can be requested by either party, whereas arbitration can be initiated by mutual consent; unilaterally by either party if one of the parties has refused mediation; unilaterally by a worker’s organisation if it has accepted a mediation proposal rejected by the employers; by either party at the company level and in the broader public sector, if the other party has rejected a mediation proposal.

The legal obligation of social partners to negotiate, combined with mediation and arbitration procedures in case of disagreement, the legally binding character of collective agreements as well as the administrative extension of the coverage of collective agreements make the Greek wage-setting system a highly regulated one. Wage regulation ensures protection of employees earnings against ‘market forces’. Protection is more valued by the weaker categories of employees and it is well-known that women are over-represented among them. Another way of preventing wages of weaker categories of employees from being pulled down by market forces in a period of mass unemployment is by granting subsidies to employers for low-paid jobs. Subsidies to employers for hiring hard-to-place categories is an important component of employment policy in Greece since the mid 1980s.

Does the existing wage-setting system tend to compress the wage structure? The OECD and World Bank comparative studies stated above, which have used the Juhn-Murphy-Pierce decomposition method, have shown that wage dispersion unrelated to



gender-specific factors is rather small in Greece in comparison to the other European countries of the groups examined. This means that the independent effect of the wage-setting system on the gender pay gap in Greece is relatively small. It should be noted though that databases on wages suffer from selectivity bias, since they exclude the wages of workers working informally. If the wages of the latter were included into the databases, than the comparative position of Greece among the European countries with respect to wage dispersion would probably change.

### ***3.2 Minimum wage, regulation of part-time pay and wage inequality***

There are no data on the number of employees covered by the national minimum wage. The latter rose in real terms across the 1980s. In 1982, immediately after the socialist party formed a government, the minimum daily wage was raised by 32% and the minimum monthly wage by 37%.<sup>6</sup> At the same time a wage indexation system was established in the public sector to protect wages of civil servants from inflation. The system was extended to the private sector through collective bargaining. From 1989 to 1993 the real minimum wage experienced a severe fall, which coincided with the abolishment of the indexation system that had already underwent amendments. Since 1993 the real minimum wage has followed an upward trend, but has not returned until today to its level of 1989. Yet, in 2001 it was 6% higher than in 1981.

Table 4: **Variation of real national minimum daily wage**

Indices			
1981	100.0		
1989	113.6	100.0	
1993	99.5	87.6	100.0
2001	105.8	93.1	106.3
81-89	113.6		
89-93	87.6		
93-01	106.3		

**Source:** Own calculations based on data from the Bank of Greece.

A measure of wage inequality at the lower part of the wage distribution is the ratio of the minimum to the average wage of the economy. Between 1990 and 2001 the real minimum wage decreased by 6.8% while the real average wage increased by 7.9% (INE-GSEE/ADEDY 2002). Consequently, the ratio of the minimum to average wage was reduced by 13.6% and wage inequality rose. This development must have exerted a strong influence towards the widening of the gender pay gap, since women are more concentrated than men at the bottom of the earnings distribution.

The pay of part-timers in Greece is regulated. It is legally determined as proportionate to that of full-timers. Part-time workers' hourly rate is equal to an eighth of the daily minimum rates or a 176<sup>th</sup> of the monthly minimum rates set by sector or occupational collective agreements. A recent change in regulation of part-time pay was introduced by Law 2874/2000, which became effective on 1.4.2001. Part-timers receiving the minimum hourly wage and working less than four hours daily are entitled to a 7.5%

<sup>6</sup> Tzannatos (1989) however, in an article studying the spectacular closing of the gender pay gap in Greece in 1982, failed to identify the rise of minimum wages as the main determinant of the phenomenon.

premium on their pay. The measure is meant to make short part time acceptable to the unemployed and the inactive, especially women. Given that the majority of part-time workers are women, the premium is favourable to the closing of the gender pay gap. However, it is very likely that employers will avoid to hire part-timers with this type of contract in order to avoid to pay a premium.

### ***3.3 Institutional changes affecting women's employment patterns***

Since 1998, the Greek government has used funds from the 2<sup>nd</sup> and 3<sup>rd</sup> Community Support Frameworks in order to improve the public infrastructure of care services. New institutions have been launched especially in the field of child care. All-day kindergartens and schools were first created on a pilot basis and their number expands from year to year. A programme of home-help for the elderly was put in place also on a pilot basis and now new infrastructure for the care of the elderly is being scheduled. The opening hours of nurseries and public services are currently under re-examination and changes are expected to take place towards an extension in the afternoon. All these policy initiatives are intended to encourage women to increase their attachment to paid employment. In so far as they affect the length of women's labour market experience, they have a positive impact on the tackling of the gender pay gap.

In the field of parental leave, the most important change in recent years is the entitlement of mothers in the public sector to a nine-month fully paid leave for child-rearing after the end of maternity leave. Mothers having opted for this leave are no more entitled to a shorter working day (without reduction of pay), a leave which was first established in 1981 and is available to date for all mothers with a child under four years. The nine-month leave is an incentive to women for having more children, but at the same time is more detrimental to women's advancement in the public sector than the 'reduced-hours' leave. Consequently, the gender pay gap in the public sector is expected to be negatively affected from this recent measure.

### ***3.4 Economic prospects of the major low paying sectors***

Women employees are concentrated more than their male counterparts in the low paying sectors of the economy and this form of segregation affects the total gender pay gap. According to 1995 ESES data, seven out of the eight sectors of the Greek economy with the lower average pay belong to manufacturing and one to services.

**Table 5: Low pay sectors, female share of employees, pay gap**

	%	
	Female share	Gender pay gap
Apparel industry	81.3	18.4
Retail	60.1	20.0
Furniture industry	28.9	18.4
Medical/optical instruments etc.	48.5	23.2
Leather industry	42.6	19.0
Textile industry	45.7	16.3
Metal products	18.1	14.3
Wood and cork manufacture	14.8	11.9

**Source:** Elaboration of 1995 ESES data.

It is noteworthy that only two of the low paying sectors are female-dominated and that the gender pay gap is the highest in the mixed sectors and the lowest in the male-dominated ones.

**Table 6: Economic and employment prospects of low paying sectors**

End – base year changes (%), X/M (ratio)

	Gross product	X/M		Employment
	1993-2001	1990	1999	1993-2002*
Apparel industry	-36.7	3.856	1.572	-39.0
Retail	35.2**			20.5
Furniture & miscellaneous	21.4	0.069	0.123	0.9
Medical/optical instruments etc.	31.9	0.064	0.109	216.6
Leather/footwear industry	-34,2	0.361	0.194	-43.5
Textile industry	-19.2	0.413	0.456	-40.9
Metal products	23.2	0.243	0.365	34.3
Wood and cork manufacture	1.8			-16.9

\* Second trimestre 2002. \*\* 1993-2000 Retail and wholesale trade.

**Sources:** National Statistical Service of Greece (Industrial production indices, External Trade Statistics, Labour Force Survey, Labour Statistics).

The economic and employment prospects of most of the low paying manufacturing industries, especially those employing great numbers of female employees (apparel, textile, leather/footwear) are very unfavourable. Competitiveness, as measured by the exports to imports ratio, is falling or stagnating at low levels and the gross product is on the decline. These industries are shedding labour and their historical role as source of employment opportunities for women has been definitely exhausted. Retail is the only female-dominated low paying expanding sector. Its role in the closing of the total gender pay gap in the coming decades will prove important, since it concentrates a high share of total female employment and has a lower than average gender pay gap.

### ***3.5 Public sector restructuring and its impact on the gender pay gap***

The public sector has undergone important restructuring since the beginning of the 1990s. A great number of publicly owned firms have been privatised or closed up and most public utilities have seen an increasing number of shares being negotiated at the Stock Exchange even though they still remain under public management and control. Privatisation and market liberalisation in the energy and water supply sector, as well as in telecommunications and transports has led to rationalisation and downsizing.

Important restructuring has also taken place in public administration. EMU criteria for financial discipline have led to non replacement of retirements by new hires in public administration and important contracting out of services and hiring of new staff under private law contracts. On the other hand, expanding social demand for more education opportunities and better quality health services has generated a considerable increase of the medical, nursing and teaching staff employed in the public sector. Between 1993 and 2001 employment in public administration has risen by 10%, while employment in public utilities and enterprises has fallen by 9.7%.

The public sector has everywhere played a key role for the improvement of women's position in the labour market. It has provided women with both career opportunities

and higher pay, because of integrated pay structures and regulated payment systems. This is also valid for the Greek case, especially after World War II.

The on-going restructuring trends described above are expected to have contradictory effects on the gender pay gap. Privatisation, market liberalisation and contracting out contribute to the widening of the wage structure and greater wage dispersion whereby gender inequality in pay is expected to increase. On the other hand, rapidly growing employment opportunities for women in public education, health and social services – all female-dominated sectors – are beneficial for the closing of the gender pay gap.

**Table 7: Employment prospects of nursing and teaching professionals**  
shares, change (%)

	Fem share Employment	
	2000	1993-2000
All in employment	39,7	16,4
Nursing and midwifery professionals (university graduates)	100,0	49,4
University teaching professionals	33,6	-36,5
Other higher education teaching professionals	29,1	134,5
Secondary education teaching professionals	56,8	18,1
Primary education teaching professionals	60,3	-1,8
Pre-primary education teaching professionals	99,2	19,7
Special education teaching professionals	100,0	-81,1
Teaching professionals in private institutes & vocational schools	74,2	47,4
Other teaching professionals	21,4	19,8
Nursing associate professionals	90,9	72,3
Midwifery associate professionals	100,0	8,4
Teaching associate profess. in pre-primary & special education	95,4	238,4
Other teaching associate professionals	39,0	79,3

**Source:** Elaboration of data from the Labour Force Survey.

Last year intensive negotiations have taken place between the unions of civil servants and government representatives over the new unitary pay frame which is going to be put in effect from 1.1.2003. The details of the proposed (integrated) pay frame need further examination so that one can find out how the changes that are discussed will affect the pay gap between women and men in civil service and local government.

### ***3.6 Other institutional changes***

Among the institutional changes that one would expect to have a positive impact on the closing of the gender pay gap is a recent decision by the Supreme Court (31 January 2001) which cleared up once and for all an issue that had been disputed in courts for a number of years. Married employees of the public sector are entitled to the whole family allowance, augmented according to the number of children, regardless of the reception or not of such an allowance by their spouse. The refusal of the State to pay to married employees of the public sector a family allowance if their spouse received such an allowance was indirectly discriminatory against women.

The Court's decision is retroactive – since 1984 – and affects over 170,000 active and 140,000 retired public servants. Its implementation started in the beginning of 2002.

#### **4. Tackling the gender pay gap: policy review and assessment**

Equal pay policy in Greece starts in the early seventies and has been limited so far to legislative initiatives. Unions have not taken any important initiatives on their own, but rather conformed to requirements of the law with respect to equal pay for the same work. The 'equal pay for work of equal value' principle, although enshrined by the Constitution, has been neglected both by social partners and policy-makers in Greece.

On 1-3-1973, the dictatorial regime equalised the national minimum monthly wage of women salary earners with that of men. Democracy was re-established in 1974 and the principle of equal pay was introduced into the Greek Constitution of 1975, which stipulates that 'all workers, irrespective of sex or other distinction, are entitled to equal pay for work of equal value' (Article 22, paragraph 1b). The Equal Pay Directive adopted by the EC in the same year has been decisive for this development.

As a consequence, the different pay rates and scales for men and women doing the same work, which prevailed in collective agreements until then were outlawed. It was illegal for women to be classified in different pay structures from men. A three-year adjustment period was established by the 1975 Constitution for the setting of common pay rates and scales for both sexes in the same occupation, specialty and job category. The National General Collective Agreement signed in 1975 equalised the national minimum daily wage of women wage earners with that of men and provided for a three-year adjustment period in line with the constitutional requirement. Lower-level collective agreements followed in the same direction.

Law 1414/1984 on 'equality of treatment in industrial relations' repeated the equal pay principle of the 1975 Constitution, provided a definition of pay and required that occupational/job classification used for wage-setting should be based on common criteria for both sexes (Article 4). Its impact on equal pay was insignificant.

Although unions got immediately and actively involved into the abolition of different pay structures for men and women in collective agreements, they have been rather slow in claiming and obtaining from employers the award of the marriage allowance to both sexes. This allowance is equivalent to an extra 10 percent on basic wages and salaries of married employees all over the national economy. Before 1989 only men were entitled to the allowance, which was meant to be part of the 'family wage', namely a supplement intended to assist married men in providing for their dependent wives (Cavouriaris & Karamessini 1993). Since 1989 both men and women are entitled to it, according to the National General Collective Agreement of that year.

It thus seems that, since the late 1980s, direct pay discrimination against women has disappeared, at least formally. In practice though there is always a margin for pay discrimination, especially when pay exceeds the minimum wages fixed by collective agreements and more in small undertakings where pay structures lack transparency, unions are absent and colleagues are unwilling to testify in court for fear of dismissal or other unfavourable reaction of the employer (Spiliotopoulos et al. 1996).

Indirect pay discrimination is undoubtedly more widespread, originating mainly from traditional felt-fair job classification schemes included into collective agreements.

‘Although most masculine-feminine denominations of occupational categories have been replaced by denominations covering both sexes, underclassification of formerly “female” categories - which are still in practice exclusively or predominantly female – persists. No study of collective agreement has ever been undertaken and no indirect discrimination cases have been brought into court’ (ibid). It is therefore difficult to prove indirect discrimination and estimate its possible impact.

These last comments indicate that equal pay policy should focus on the review of job classification schemes in collective agreements from a gender equality perspective and to the provision of support and publicity to exemplary cases brought in court so as to enhance awareness-raising among women employees and social partners. It goes without saying that addressing the problem of occupational segregation by gender is an equally important direction for equal pay policy, but bears fruit only in the long run. Finally, measures taken to extend women’s labour market experience can also contribute positively to closing the gender pay gap, though to a lesser extent than the aforementioned measures. This is because Greek women either work continuously over the lifecycle - with very short or no interruptions at all - or permanently quit paid employment after marriage or after giving birth.

## References

- Barry, U., Bettio, F., Figueiredo, H., Grimshaw, D., Maier, F. & Plasman, R. (2001), ‘Indicators on Gender Gaps in Pay and Income’, in J. Rubery, C. Fagan, D. Grimshaw, H. Figueiredo & M. Smith (eds.), *Indicators on Gender Equality in the European Employment Strategy*, <http://www.umist.ac.uk/management/ewerc/egge/egge-publications>.
- Blau, F. D. & Kahn, L. M. (1992) ‘The Gender Earnings Gap: Learning from International Comparisons’, *American Economic Review*, 82 (2), pp. 533-538.
- Blau, F. D. & Kahn, L. M. (1997) ‘Swimming Upstream: Trends in the Gender Wage Differential in the 1980s’, *Journal of Labor Economics*, 15:1, pp. 1-42.
- Blau, F. D. and Kahn, L. M. (2001) ‘Understanding International Differences in the Gender Pay Gap’, Working Paper No. 8200, *NBER Working Paper Series*, Cambridge, MA.
- Cavouriaris, M. and Karamessini, M. (1993) *Wage determination and sex segregation in employment in Greece*, European Commission Network of Experts on the Situation of Women in the Labour Market, Working Paper, Manchester: UMIST.
- Grimshaw, D. and Rubery, J. (2002) ‘The adjusted gender pay gap: a critical appraisal of standard decomposition techniques’, European Commission experts group on Gender and Employment, Report to the Equal Opportunities and Family Policy Unit of EC-DGV.
- INE-GSEE/ADEDY (2002), *The Greek Economy and Employment. Annual Report 2002*, Reports No. 4, Athens.
- Juhn, C., Murphy, K. and Pierce B. (1991) ‘Accounting for the Slowdown in Black-White Wage Convergence’ in M. Kosters (ed.), *Workers and Their Wages*, Washington D.C.: AEI Press, pp. 107-143.

- Kanellopoulos, C. (1982) 'Male-female pay differentials in Greece', *Greek Economic Review*, Vol. 4, No. 2, pp. 222-241.
- Kanellopoulos, C. (1994) 'Public-Private Wage Differentials in Greece', *Discussion Papers* No 36, Athens: Centre of Planning and Economic Research.
- Kanellopoulos, C. (1997) 'Pay Structure in Greece 1974-1994', *Discussion Papers* No 65, Athens: Centre of Planning and Economic Research.
- Kanellopoulos, C. and Mavromaras, K. (2000) 'Male-female labour market participation and wage differentials in Greece', *Discussion Papers* No. 71, Athens: Centre of Planning and Economic Research (forthcoming in *Labour. Review of Labour Economics and Industrial Relations*).
- Karamessini, M. (1997), 'Equal opportunities and collective bargaining in the European Union. A case study on the National General Collective Agreement from Greece' Working Paper No.: WP/97/72/EN, Dublin: European Foundation for the Improvement of Living and Working Conditions.
- Karamessini, M. & Ioakimoglou, E. (2002) 'Determinants of the Gender Pay Gap in Greece', paper presented at the 23<sup>rd</sup> Conference of the International Working Party on Labour Market Segmentation, Spetses – Greece, 18<sup>th</sup> – 20<sup>th</sup> July.
- OECD (2002), 'Women at work: who are they and how are they faring' in *Employment Outlook 2002*, Chapter 2, Paris.
- Psacharopoulos, G. (1983) 'Sex Discrimination in the Greek Labour Market', *Journal of Modern Greek Studies*, vol. 1, No. 2, pp. 339-358.
- Rice, P. (1999) 'Gender Earnings Differentials: The European Experience', *Working Paper Series*, No. 8, The World Bank.
- Rubery, J. & Fagan, C. (in collaboration with D. Grimshaw) (1994) 'Wage Determination and Sex Segregation in Employment in the European Community', *Social Europe Supplement* 4/94, European Commission: Directorate General for Employment, Industrial Relations and Social Affairs.
- Rubery, J., Bettio, F., Fagan, C., Maier, F., Quack, S. and P. Villa. (1997) 'Payment Structures and Gender Pay Differentials: Some Societal Effects', *International Journal of Human Resource Management* 8 (3): 131-149.
- Salverda, W., Nolan, B., Maitre, B. & Mühlau, P., with the help of Bazen, S., Connolly, S., Gregory, M., Nierop, C. & Zaidi, A. (2001), *Benchmarking Low-Wage and High-Wage Employment in Europe and the United States*, study by LoWER, European Low-Wage Employment Research Network.
- Spiliotopoulos, S., with the collaboration of A. Petroglou (1996) 'General Report 1996: Monitoring implementation and application of Community Equality Law in Greece', European Commission experts group on Equality and Law.
- Tzannatos, Z. (1989), 'Women's Wages and Equal Pay in Greece', *Journal of Modern Greek Studies*, vol. 7, No. 1, pp. 155-169.